THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XV. No. 368—18th YEAR.] LONDON, NOVEMBER 27, 1866. [Subscription per Ann. { 15s. in Advance / 18s. Credit.] Price 8d. Unstamped.

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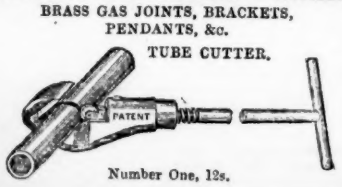

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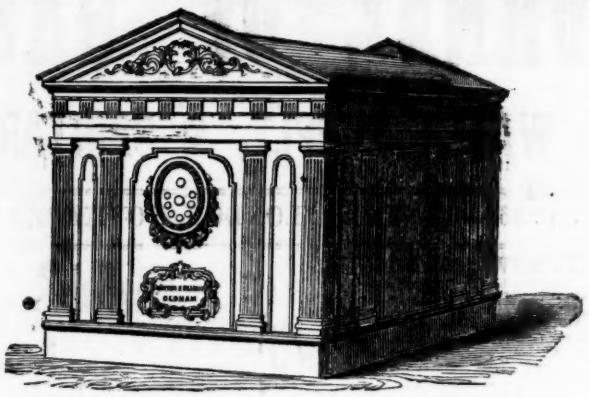

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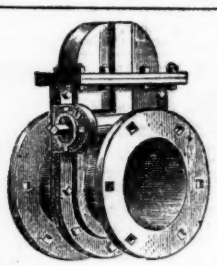

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☞ *See "Practical Mechanic's Journal," Dec.* 1, 1865; *also, p.* 711 "JOURNAL OF GAS LIGHTING," *Sept.* 18, 1866.

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ANOTHER

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1862,

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It is worthy of remark, that the only two other Firms who receive Awards *both manufacture imitations of Thomas Glover's* Patent Dry Gas-Meter, and the reason given for these Awards is *"construction* and sound workmanship." Thomas Glover, therefore, claims that the *construction* of his Meter has obtained *three Awards from the Jury of the International Exhibition of* 1862; at the same time, *contrasting* the Award granted for his Meter by the words, *"For excellence of manufacture, as regards Dry-Meters."*

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CONTENTS.

Notes upon Passing Events:— PAGE

The Meeting at Geneva of the International Association of Workmen 841
The Privy Council and the Cattle Trade 843

Leading Article:—

Advantages and Disadvantages of Centralized Administration of Municipal Affairs 843

Circular to Gas Companies:—

The Board of Trade Notice for Amending the Metropolis Gas Act and Authorizing the Transfer of the Gas-Works to the Metropolitan Board of Works 846
The Corporation Gas Notice 848
The Imperial and Chartered Companies Notices 849
Proposed Revival of the Subway Scheme by the Metropolitan Board 849
Returns from Gas Companies on Captain Gridley's Motion . . . 849
Meeting of Scotch Cannel Masters, and Rise in Price 849
Cessation of the Strike at the Manchester Gas-Works 850

Register of New Patents:—

Shinner, G. W.—Utilizing Sewage Matters and Liquids 850
Blundell, G. T.—Screw-Valves for Water-Closets 850
Dickinson, J., the younger—Cocks or Taps 850
Leigh, J.—Purification of Coal Gas 850
Haseltine, G.—Lighting and Extinguishing Street and other Lamps . 850
Russell and Carbines—Manufacture of Gas 850
Abel, C. D.—Joints or Connexions for Pipes 851
Upward and Cochrane—Manufacture of Gas 851
Noone, G. E.—Deodorizing and Treating Sewage and other Refuse . 851
Holden, E.—Ventilation 851
Newton, H. E.—Engines for Obtaining Rotary Motion 851
Hughes, R. H.—Lamps and Burners, and Apparatus for Lighting Lamps 851
Lewis, J.—Valves for Regulating the Flow of Steam, &c. 851
Denis, G. C.—Refrigeratory Safety Washer 851
Cohen, D.—Dry Gas-Meters 851
Young and Brash—Distillation of Coal, Shale, &c. 852
Bricknell, A. L.—Rotary Engine-Pump and Water-Meter 852
Clark, W.—Lighting Apparatus 852
Applications for Letters Patent 852
Grants of Provisional Protection 852
Notices to Proceed 852
Patents which have become Void 853

Legal Intelligence:—

Court of Chancery—Butt *v.* the Imperial Gaslight and Coke Company 853
Court of Common Pleas—The Mayor, &c., of Hereford *v.* Morton . . 854
Court of Bankruptcy—*Re* Tom Abercrombie Hedley 854

Miscellaneous News:—

Metropolitan Board of Works 855
Suspension of Messrs. James Russell and Sons, Wednesbury 855
Presentation to the late Manager of the Gas Department of the London and North-Western Railway Company 855
The Probable Exhaustion of Coal 855
Accounts of the Birmingham Gas Companies 856
Dismissal of a Summons under the Petroleum Act 857

Share List of Metropolitan Gas Companies 857
Price Current 857

TO CORRESPONDENTS.

T. L., Strabane.—*The meter should have been tested while burning the number of lights marked thereon.*

NOTICES.

The subscription is 15s. per annum, if paid in advance during the month of January, or 18s. credit, in two sums of 9s. each, in July and January of each year. Post-Office orders must be made payable at the Charing Cross Money-Order Office, to William H. Bennett, No. 42, Parliament Street, Westminster.

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Stamped copies, when forwarded by post, must be folded so as to expose the stamp; they are otherwise liable to the full postage charge for letters.

All Communications to be addressed to the Editor, No. 42, Parliament Street, Westminster; and orders for Advertisements to the Publisher, Mr. W. B. King, No. 11, Bolt Court, Fleet Street.

THE JOURNAL OF GAS LIGHTING.

WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, NOVEMBER 27, 1866.

Notes upon Passing Events.

THE names of Mr. Odgers and Mr. Cremer will be familiar to those who have followed, in the newspapers, the demonstrations of the Reform Leaguers, as active in council and speech-making. They are both, we believe, journeymen carpenters, who, while retaining the costume and habits of working men, have had the good sense to turn their talents to account, and live as representatives of their class by their heads, pens, and tongues, instead of by plane and saw. But it is not so generally known that Messrs. Odgers and Cremer have a European reputation as members of a grand central council sitting in London for the purpose of regenerating and revolutionizing the whole relations of capital and labour. We are indebted to an article under the title of "A New Form of Socialism," in a French review, for a complete notice of the discussions of a congress of workmen held at Geneva in the autumn, which received very slight notice from our daily press. On the 3rd of September last, at nine o'clock in the morning, two thousand men marched through Geneva with bands of music and flags flying to a meeting in the great hall of a brewery. This procession was accompanying to its deliberations "the delegates "of *the International Association of Workmen.*" It appears that this association has its seat in London, and that its members are to be found in France, Germany, Switzerland, Italy —in fact, throughout Europe. It has been established only two years, and already professes to have one hundred and sixty thousand members; but whether these are subscribing or merely enrolled members does not appear. Its object is to bring about, by peaceful means, a social revolution—an economical revolution, in favour of the working classes; in fact, to enable those who receive wages to settle the amount they shall receive, the number of hours they shall work, and the quantity of work they shall do per day, without reference to those who pay the wages. As all wage-earners have an apparent interest in doing as little and getting as much as possible, the idea is to make one solid union of the workers of all countries, as distinguished from the payers. It is said to have originated in the meeting of British and foreign workmen at the last Universal Exhibition in London. The French and English workmen mutually complained that employers of both countries make use of the same pretext for lowering or not increasing wages—viz., the necessity of competing with England or with France, as the case might be. Accordingly, at the London meeting, the idea of an international union for the purpose of keeping up wages was talked over, and many other advantages of such a union soon presented themselves. "The liberty that exists in England" (although, according to Messrs. Odgers, Cremer, and Bright, all men without the suffrage are slaves) enabled the promoters to carry their idea into practical execution. The International Association was founded at a great meeting held in St. Martin's Hall, in London, on the 28th of September, 1864. It was determined that they should meet once a year, in congress, to discuss international social questions, and that the meeting for 1865 should take place at Brussels. A central committee, sitting in London, drew up a provisional prospectus, a document filling two pages of small print, from which we gather the following points:—The preamble states "that the emancipa-"tion of workmen must come from the workmen themselves; "that *the subjection of the workman to capital is the source of* "*all political, moral, and material servitude;* and that, there-"fore, all political movements should be made subservient to "the economic emancipation of the working classes."

The ten articles of the International Association were signed by three Englishmen, including the two already named, as president and as secretary; it apparently was not safe for the inhabitants of France, who possess "the inestimable "advantage of universal suffrage," to put their names to such a declaration of war against capital. The French writer says:—In September, 1865, the first anniversary meeting of the society was celebrated by a brilliant *fête*, at which more than two thousand persons were assembled. It was in England, and of course neither tea nor eloquence was wanting; there were present representatives of local committees from Italy, Belgium, France, Germany, Switzerland, Rhenish Prussia—in fact, almost all Western Europe appeared there and spoke. We suspect that many of these delegates were workmen or refugees settled in London, and appointed by correspondence. France had correspondents, in direct communication with the central committees, from Paris, Lyons, Marseilles, Rouen, Caen, Nantes, Lisieux, Elbeuf, Neufchateau; and important committees or groups had been formed in Germany, Switzerland, Italy, Denmark, and Belgium. Measures had been taken to establish correspondence in the United States and Brazil. It was impossible to do anything in France but to form groups, with meetings of not more than twenty persons at a time, in each of the towns, each corresponding directly with London. It was proposed to hold the congress of 1866 in Brussels, but the Alien Act of that country rendered a change necessary, and Geneva was selected

There the procession marched through a crowd, and were joined at the brewery hall by the workmen's unions of that city. The delegates, sixty in number, occupied reserved seats. Lyons sent ten, Paris eleven, seven came from London; none came from Germany, and those expected from Belgium and Italy did not appear. A letter from Milan and several from Germany explained that war was the cause of the much regretted absence. The chair was taken by a Swiss: over his head three banners were draped, not without significance—the first was the flag of the Swiss Republic; the second, the stars and stripes of the United States; the third, the red flag of the Association—a colour with numerous associations—a motto was inscribed beneath, "No duties without rights, no rights "without duties." The speeches were long—the discussion lasted several days. There were interruptions of course—four or five persons from Paris wished to take part in the discussions without authority. The English delegate proposed that this group should name one person to speak for them; the French supported this proposition; all the other delegates opposed the motion; but the five strangers protested, shouted, insisted on speaking, and there was a grand row, until at length the chairman called upon the meeting to help him to put down the persons who had come to upset the discussions. The business finished in a pleasant way only possible on the Continent, with a concert, a procession on the lake, and the inevitable dinner of England, with speeches—the dinner being the thing we understand and manage best, from our system of putting off the speeches until the dishes have been removed, and having a list of toasts and a toastmaster. Some of the arguments used in support of this new system of political economy are eminently French, and will hardly be understood by our men, who see perfect happiness in the Utopia of eight hours works at 8s. a day. For instance, an evidently French orator says: "Beware of making politics of more importance "than the social economic question. What matter is it to us "whether we live under a republic or an empire, so long as "the *bourgeois* (the word is not translated by tradesmen, "masters, or capitalists, but it means masters with money) "govern us according to his interests—as long as capital "commands labour?" And the congress proposes to supersede the necessity of the capitalists by some mysterious undeveloped idea of association for providing capital without interest—"gratuitous credit." According to the theory of these social reformers, represented by Messrs. Odgers and Cremer, capital, "which is only realized labour, charges "interest for its use in obtaining labour, and it is not just to "obtain 105 of labour of 100 of capital." They also object entirely to female labour away from home. They maintain—and most persons will agree with them, as an abstract proposition—that woman's first duty is to her children (if she has any); that no wet nurses, infants-schools, or "creches," can replace a mother. But it is questionable whether the women of Lancashire, or of Mulhouse, or of any flourishing cotton or silk factory districts, or the thousands of women who earn their living by light work in Paris and London, will vote for this when they have votes. The congress also protests against schools supported and directed by the State. "In-"struction should be by the parents, or by teachers freely "chosen by the parents. State education is incompatible with "liberty of conscience." Here a French or German pen is plainly seen, for in those countries every book used in public schools requires the direct sanction of a minister of state. "Whoever separates the school from the workshop reproduces "the distinction of classes. . . . The State (of France) "does this by its Polytechnique School, its Central School, "School of Arts and Manufactures, School of Mines. ". . . *All these tend to subordinate the working to the* "*'bourgeois' class.* . . . Parents are to be enabled to "dispense with State aid by means of co-operation. . . . "All taxes should be direct—at present taxes increase "in proportion to the poverty of the individual. *The* "*working man is the only person who pays taxes.*" If this assertion is meant to apply to England, it is really rather strong; yet it was read aloud at Geneva with great signs of applause. Protection and Free Trade were both tried, and found guilty by the congress of being "equally systems carried out to defraud "the working classes. . . Protection is collective force "placed in the hands of great manufacturing feudal chiefs. . "Free Trade has, up to the present time, only been distin-"guished from Protection by fostering giant monopolies and "creating even more misery. . . Justice can only be "secured by adopting this formula—equal exchange, based "on reciprocity and solidarity (common interest?) between "consumers and producers." We do not pretend to explain what this means; we give it as it is given in the report. The next subject discussed was religion. "*The Influence* "*of Religious Ideas on Social, Political, and Intellectual Pro-*"*gress.*" The delegates were unanimous that religion had no influence on morality, "morality being a science which bases "its laws in human nature. . . . all religion which pro-"fessed to support morality can only have an injurious effect." On this point the delegates were agreed. But it was objected that the peasantry would not understand a proposition so sweeping; and in consequence a resolution proposed by the French Delegation, to the above effect, was withdrawn. Some political questions as to Russia and Poland were passed over. The English delegates proposed that a law should limit the hours of adult labour to eight—of children from nine to twelve years old, to two hours; from twelve to fifteen years to four hours; and from fifteen to seventeen, to six hours. The French Delegation, whose principles were opposed to any regulation of labour by laws, abstained from voting, and thus prevented any vote from being taken. The next question discussed was whether the association should combine the efforts of different people in the struggle between capital and labour. The English delegates proposed that a statistical inquiry should be made into the condition of the working classes in all countries by working men themselves; that, wherever branches of the association existed, an immediate inquiry should be made embracing the following points:—The age and sex of the workers; their wages; the hours of work; and their moral condition. In supporting this proposition—to which the English delegates gave their chief attention—they pointed out that in order to make strikes effective the workmen of all countries should combine, because they were often defeated by the importation of foreign workmen. By correspondence between the different sections of the association strikes might be organized on a "gigantic, universal, and irresistible "scale." It perhaps occurred to some of the workmen present that this proposition would be particularly favourable to English workmen, whose wages are the highest in Europe. England imports workmen from almost every country in Europe, but English workmen only migrate for higher wages than the average in England. However, the following resolution was passed:—"The congress declares "*that in the actual state of industry, which is a state of war,* "mutual aid should be given for maintaining wages; but it is "its duty to declare, at the same time, that *the point to be* "*aimed at is the total suppression of the system of wages.* It "recommends the study of economical arrangements to this "end, based on justice and reciprocity." The seat of the central council for 1867 is in London, and the congress for the same year will be held on the first Monday in September, at Lausanne—no other country in Continental Europe being open to such a meeting, and England being too far and too dear.

In this country, where perfect liberty of speaking, writing, working, and trading exists, there can be no objection to such meetings as these, and such discussions; on the contrary, we see the great advantage from open debate and open declaration of principles, instead of the secret illegal meetings, and consequent conspiracies, of France and other countries, where every workman must carry on his person papers of identity and respectability, which any policeman can make him produce, and where all meetings for the discussion of any subject are, as a rule, illegal. We may go further, and agree that there cannot be too many co-operative societies or arrangements, as long as they succeed. The public would be just as well satisfied to have its clothes made by co-operative tailors, its bread baked by co-operative bakers, and its houses built by a co-operation of all the trades required. All the public requires is to be suited as to quality, price, and often credit. Universal cash transactions would amazingly facilitate co-operation, but that is a consummation that seems a long way off at present; indeed, longer off than ever, for credit is one of the marks of civilization. But when we are told that the present system of employers, who can wait until an article is manufactured and sold, and of the employed, who take wages every week because they cannot wait, but want hard cash down to go to market, is a state of war, and that the man who pays wages is a tyrant in virtue of his position as a capitalist, we cannot help wondering whether the people who believe these

things believe also that those countries are most happy where capital and credit are most scarce; because if so, Ireland, from which capitalists have been successfully chased away, ought to be a very happy and successful country. Mr. Odgers, one of the most able and fluent advocates of universal suffrage—that is, the subservience of education and property to numbers without property—was also one of the most ingenious witnesses before the House of Commons committee on the law of contracts between masters and workmen. He contended that it was unjust that a master should have a criminal instead of a merely civil remedy by damages against a workman who, having entered into a contract to work for a certain time at certain wages, broke that contract. He required that, instead of paying in person by imprisonment, the workman should only be subject to an action for damages. The meaning of this evidence has been explained by a case brought before the congress of Geneva as an example of the tyranny of capital. A workman who had entered into an engagement for a year, broke it, and refused to work, when wages in the district rose, without he received the higher rate. The tyrant master brought him before magistrates, convicted him, and he was imprisoned for a short time; when released from prison he again refused to work, was again sentenced to imprisonment, and so on. Now, it is quite clear that if wages had fallen, and the master had attempted to break his contract, the workman would have had his remedy by an action and in ample damages, for conducting which a dozen attorneys would have been competitors. A workman fined either has no means to pay, and so sets civil process at defiance, or falls back upon his union, which pays for him, as an example to others to go and do likewise. But if the friends of Messrs. Odgers and Cremer can only get the making of laws, all this will be changed, and the capitalist, as long as he lasts, will be bound to conform to the wishes of the united trades. Not that there need be any apprehension of a European trades union until the wages of all Europe have been equalized, and trades union intimidation has been legalized. The London tailors were, in the first flush of the congress, supported by German tailors, because the German armies had taken off a large per-centage of able-bodied men, and there were very few tailors to spare. But as long as an extra pot of beer can do so much in England, we shall have great faith in the offer of an extra two shillings a day in Germany, the land of emigrants, in spite of all the rules a central council can make. We shall watch with some curiosity to see whether the Bill for limiting the labour of children of tender years will receive the support of those who have been loudest in advocating the abstract rights of man in a political sense.

Before leaving this very interesting subject of the war between capital and labour, which sounds so like Æsop's fable of the quarrel between the belly and its members, we should like to put the following case for the opinion of the Central Council of the International Association of Workmen. We have at present two workmen in our employment, one is about to leave us. One, whom we will call Jones, is a carpenter—an excellent workman and a steady fellow; but he married at nineteen, he has several children, his wife is not a very good manager, and they are both, although perfectly correct, very fond of amusement. The consequence is that Jones, although he earns very good wages, never has a shilling to spare. Our other man, whom we will call Robinson, is a smith, and can turn his hand to many things in the metal way—paint, glaze, and be generally useful. He married at five-and-twenty and has children, but his wife is an excellent manager, and Robinson has always been a very careful, although a pleasant fellow. The other day he gave us notice to quit, and declined an offer of higher wages. The fact is that he has saved a little money, which he has invested successfully; so, having by his industry and civility acquired a connexion, he is going to set up for himself, and has already secured two or three small contracts. Now the other day, according to Mr. Odgers, president, and Mr. Cremer, secretary of the Workmen's Emancipation Society, Jones and Robinson were both the slaves of capital. We should like to know if, when Robinson opens his shop next month, he will be metamorphosed into a tyrant capitalist. And if not, why not?

The Privy Council have decided to differ with the recommendation of the committee on the Cattle Trade, who did not venture to recommend a separation of the markets for British and foreign cattle. The Privy Council knowing that, under timid measures of repression, the Rinderpest was raging worse than ever in Holland, and that in South Germany the march of armies and the confusion of a state of war had relaxed the usual precautions, and allowed the plague to cross the frontiers, have taken stringent measures, by an order in council, to prevent a second introduction of this curse. Foreign cattle can only, by the last order in council, be introduced at ports specially licensed, and must there be immediately slaughtered, or subjected to a quarantine not exceeding twenty-eight days. Thus foreign cattle will no longer be permitted the chance of contaminating the thousands assembled in the great markets. The next step will be to establish on the Thames and the Humber foreign cattle markets, and to settle, from time to time, from what foreign ports cattle may be freely imported. France, Spain, Portugal, and Denmark are more free from taint than England itself; there is no reason why any restriction should be placed on the cattle from those countries. But the exports from all German ports should be placed under the most rigorous quarantine.

Attempts are being made to increase the trade in dead meat, and to force as many cattle as possible to be slaughtered at the Metropolitan Market. Such measures will end in unduly increasing the price of meat. For offal, which is profitably sold in great towns, there is no demand in villages. All that a butcher loses by being compelled to slaughter far from home he must charge his customers. One great dead meat market for all London may sound and look very grand, be profitable to the Corporation of London i but the most profitable market to the producer and the consumer is in the butcher's shop.

ADVANTAGES AND DISADVANTAGES OF CENTRALIZED ADMINISTRATION OF MUNICIPAL AFFAIRS.

The notorious failures in the administration of the municipal government of the metropolis of this empire have turned the attention of the public to the question of the propriety of that system, as compared with the one which prevails in another country, and have led many persons to the conviction that a centralized system of administration is to be preferred. Dazzled by the results that have attended the efforts of Napoleon III. to improve and adorn Paris, the advocates of the system that he has adopted have at once jumped to the conclusion that it was owing to that system that he was enabled to perform all the wonders which so much excited their admiration, and they have been induced to express the belief that we should do well to adopt a similar one. It cannot be denied that Paris has, in this manner, been wonderfully improved. The health, the comfort, and the pleasure, of the dwellers in that city have been, it is true, advanced in a degree that is absolutely bewildering; the communications through the city have been facilitated; the drainage, the water supply, the gas service, have made advances that make Paris about the best example of a city in those respects. The walks and squares that have been created are all that could have been desired; the parks and places of public amusement are of the first description; the buildings are, if not unexceptionable, at least well calculated for the ends they are designed to fulfil; in fine, the works that have been executed at the expense of the municipality of Paris are designed with a breadth of character and a unity of purpose that must always excite the admiration of posterity, and that may well justify the envy and admiration of foreigners. But this improvement in the condition of Paris is, it strikes us, more apparent than real; it is not founded upon any change in the habits or modes of thought of the inhabitants—it is simply dependent upon the will of one man, and may as well be suspended at any one moment as continued unto the end. The public mind is not consulted, the public are not brought immediately acquainted with the motives that influence the decisions upon the various questions to be considered in the several cases; in fact, the inhabitants of Paris are kept in a state of perpetual infancy, and the Government has taken upon itself the duty of thinking and acting for them in all things that relate to the management of municipal affairs.

It cannot be pretended that this is a necessity of the position. The Seine, indeed, makes in its course towards Poissy two large bends, which, by reason of the fall of the river, would enable the sewage to be discharged at a higher level, if only the outfall drain were carried across the country, along the line necessary to produce the fall. This would allow of the disposal of the matters derived from the drainage, which must always have a certain value in the plains of Nanterre, Sartrouville, and Carrières-sous-Poissy, either of which would be improved by a

course of warping with sewage manure. Yet this is not attempted; the drainage had to be removed from Paris, and, provided that object were attained, there seems to have been no care nor thought of the interests of the inhabitants of the districts that might be affected.

The same thing has occurred with the Paris water supply, though perhaps in a different degree. In that case, the city has incurred a great expense to lead to the town reservoirs a supply of spring water; but the water has been conducted to the reservoirs without making any provision for the deposition or the filtration of the waters so brought. This was all the more necessary because the springs were intercepted in the country, and were liable to contamination on the occasion of every shower, every fall of snow, or any meteorological disturbance. The consequence is, that on every change of weather the water from the Dhuis, which has been obtained at so large an outlay, is highly charged with detritus and animal matter—so much so, in fact, as to be quite cloudy and undrinkable. There is now, therefore, but little improvement in the Paris water supply, all things considered. It was previously of a character precisely similar to that now distributed, and all that has been gained is, that the town can dispose of larger quantities of the fluid. The supply that is to be derived from the Vann, moreover, will be of the same description as that from the Dhuis; it is proposed to lead it without any kind of filtration to the centre of distribution, where it will be left to purify itself in the best manner that it can. The French engineers, by the way, do not attach as much importance to the operation of filtration as the English engineers do; the French engineers, in fact, have proved to their own satisfaction that no means exist by which the quantities of water required for a town supply can be thoroughly or effectually filtered.

This is very apparent in the works that have lately been executed for the improvement of the drainage of that town. We say *drainage*, for the French authorities continue to keep that system distinct from what we, in England, by a kind of neologism, call the *sewage*, which in Paris is removed from the houses by carts, in the style that prevailed here before the general introduction of water-closets. The whole of the drainage is, however, brought down to two outfalls, respectively on the north and south sides of the river Seine; and the drainage of the north side of Paris is carried to a point below the town, on the right bank of the river, situated on a bend of it at a considerably lower level than the portion of the town that it serves to relieve. In fact, the system adopted has been to execute a description of intercepting drain, that is carried from the point where the drainage is united on the *north*, or right, bank of the Seine, to a point below Asnières, on the *south*, but still, in consequence of the turn in the course of the river, on the right bank of the Seine, where the products of the drainage are cast into the river without any attempt being made for their disinfection. Now, it is known to every one conversant with the subject that the drainage of streets, particularly of such streets as are in Paris, is composed of matters that contain properties particularly noxious; in fact, the waters of the outfall drain at Asnières are as black, and they smell as strongly, as those that are collected in the outfall sewers of London. The inhabitants of the lower parts of the course of the Seine, therefore, find themselves exposed to the inconvenience of having the waters that flow past their dwellings contaminated by the drainage of the capital; and this is the more serious that the waters of the Seine are ponded up by the lock that is erected on the river at Bezons, a little below the outfall at Asnières. Between Asnières and Bezons, however, there occur on the banks of the river the populous villages of St. Denis and Argenteuil, both of which depend upon the Seine for their water supply. Immediately below Bezons, which is itself a village of about 500 inhabitants, there occur the villages of Nanterre, Chatou, &c., the town of St. Germain, Vessinet, and the place from whence the waters are derived that go towards the water supply of the town of Versailles. There is, therefore, as much interest in the purity of the stream in the lower part of the course of the Seine as it is possible, and yet there is no attempt made to ensure it; on the contrary, the drainage is cast into the river, without any attempt at its interception or purification.

The gas supply of Paris is not liable to the same class of observations as the sewerage, or the water supply of that town; because it is practically without fault, and is carried on with a degree of attention and care that argues well of the authorities who are charged with it. But the system of making the private consumer pay for the public supply, which is adopted in the case of Paris, is, it strikes us, a radically false one. It tends to superinduce a carelessness on the part of those engaged in the manufacture that must considerably augment the price of the article, and the absence of all fear of competition tends to induce the most expensive style of production. The profits of the gas company of Paris are, indeed, such that no efficient control can ever be exercised over the cost of manufacture, and the inconvenience that was attached to the management of the old West India Docks seems very likely to be reproduced in this case, when the town shall be entitled to participate in the profits of the company. At any rate, there will be no inducement for the directors to reduce the price to the consumers; and, though the public lighting may be most efficiently performed, the private lighting seems to us to be condemned to remain in the state that it now is. The fact is, that all attempts to introduce a regulated monopoly in this class of interests is surrounded with great difficulties. The system that has been adopted in Paris has not solved the problem, but has rather increased the inconveniences that always attend the solution of the effort to reconcile the interests of the public and the manufacturers.

It seems to us, therefore, that in the matters of the drainage, the water supply, and the gas service, the town of Paris is, at present, far from being in as good a position as it would be under the *régime* of entire liberty. There can be no doubt that the latter system has numerous inconveniences from which we in London suffer, and from which the Parisians are exempt; but these are all of our own making, or of our own supporting, and they might be put an end to by the combined action of those interested in the good organization of society. The disposal of the refuse of the drains might be, and is to be, disposed of by its conversion to the purposes of agriculture by the London Reclamation Company; the question of filtration has received a solution of the most practical description at the hands of the London water engineers; and the gas service of London is performed in a manner to reconcile, as far as possible, the interests of the public and private consumers, and the parties undertaking that duty; and all these results have been attained by leaving the municipality free to adopt the measures which it might think proper to adopt in the case of London. It may be that in France some such state of things must exist, by the kind of reverence with which the decisions of the engineers of the *Ponts et Chaussées* are regarded in everything that appertains to their profession, whereas everybody in England thinks himself entitled to examine everything that an engineer may propose, and even the medical profession consider themselves entitled to prescribe the precautions to be taken for ensuring the observance of the hygienic conditions of the various parts of the duties of engineers. There is something peculiar in the place that the *Ingénieurs des Ponts et Chaussées* occupy in French society; they are looked upon as a superior class of men, who possess all the science that is required for the exercise of their profession, and no one thinks himself at liberty to question their decisions upon any subject they may think proper to entertain—they occupy, in fact, the same position in, and exercise the same influence upon, society that the clergy do in England. The consequence of this is, that no one in France thinks of questioning the decisions that the engineers have come to with regard to the details of the water supply and the sewerage; but, as the *Ingénieurs des Ponts et Chaussées* are dependent upon the powers acting for the means of maintaining their position, they are at all times liable to be influenced by the theories and fancies of those in possession of power. No doubt that much of this kind of superstitious reverence with which the engineers are regarded in France, is attributable to the severe course of study, and the necessity for passing through a most rigid system of examinations which every engineer is condemned to undergo; but this very course of study tends to restrict the originality of genius, and to substitute the traditions of schools for it. Besides, it has the danger, and it is a real one, of causing the public to receive blindly the dictates of the men that are thus supposed to be qualified to lay down the law, instead of exercising their own judgment upon the matters before them, or of allowing the free expression of talent in these affairs. The French engineers are better mathematicians than their English brethren, and they are better acquainted with the laws of chemistry mineralogy, mechanics, hygiene, hydraulics, &c., than the last-named professional men; but they sacrifice all to theory, and, practically, they do not pro-

luce such results as the English engineers do, who are brought up in the traditions of open competition. Coulomb could discover the means of executing all kinds of foundations under water, but it was reserved to Mr. Hughes to apply the principles in the Rochester Bridge: the system of hollow wrought-iron girders was known in France long before it was practised here; and the work that was published by Eck upon the application of pottery and wrought iron, and the masting-tackle at Havre, were executed and published before Mr. Fairbairn tried the same principles on the Torksey Bridge, or began the experiments which led to the formation of the Menai tubes. But, with these exceptions, every improvement that has been made in the science of engineering has originated in England or in America, where, in fact, "every "soldier carries his marshal's staff in his haversack." The system of canal navigation, the principles to be observed in the construction of lighthouses, the application of steam to the propulsion of vessels, gas lighting, turnpike roads, the dock system, railways, suspension bridges, the electric telegraph, the recent improvements in drainage and water supply, all have originated in England or in America, and against this list the French engineers can cite no instance of improvement originating amongst themselves. It must be so; there is every inducement for them to dwell upon the inventions of others, there is none to induce them to risk their reputation upon a chance of discovering a new principle, or to start some new application of those already practised.

The organization of French society is, however, conducted upon principles so essentially different from those of England, that it is in vain to establish anything like a comparison between things that are so entirely dissimilar. France is exclusively a democratic country, and the government of France is conducted on the principles of strict equality before the law, and, as far as possible, the power is entrusted to those who prove themselves best qualified to enjoy it; whereas in England the principles that are admitted may be said to be exclusively aristocratic, and the power of government is in the hands of the few who inherit it. Of course there cannot be in any case a strict application of these principles, for human nature is moved by so many motives, that the attempt to identify the action of any of those motives is always exposed to the danger of neglecting some of them. Society is, in fact, governed by complex laws, and is never capable of being classed under any one definition, such as aristocratic or democratic; particularly in the case of an old country animated by the traditions of many centuries. But France is, for all that, essentially governed by the class that has proved itself to be the most capable of discharging those functions, by going through the severest examinations that can be devised, and the descendants of Du Gueschin think it more honour to fill the post of an engineer of the *Ponts et Chaussées* than to inherit the name of their great ancestor. We, in England, cannot understand the social system founded on these principles; yet they are very full of life, and they are distinctly recognizable in French society. The worst of this is, that everything in France is forced to bend to this Chinese system; the whole government of the country is organized on the principles of the strictest hierarchy; no one is there allowed the slightest individual liberty, and the every day affairs of life are obliged to be regulated by law. This system does not produce disadvantageous results so long as it is in good hands, and it must be confessed that it is now emphatically so, for the present Government has done wonders for the advance of the French nation in every branch of civilization; but the question is, what will be the ultimate results of the system should it happen to fall into the hands of a weak and irresolute ruler? The people, unaccustomed to act for themselves, would then be thrown back upon their own resources, which they would be unable to employ; they would have to learn the difficult lesson of thinking for themselves, which they had dispensed with so long; they would be taught by sad experience that the result of human efforts is in the hands of Providence, and that the wisdom of man is in vain to endeavour to control the workings of nature. It is not whilst everything works well that a system should be judged of, but when events have happened that derange the working of it; and the French system seems to us to fail precisely in those circumstances, even if it cannot be said to do so under those that are particularly favourable.

That this is a real danger seems to us evident from an examination of the course of business that is supposed to be conducted in Paris. As was said by Mr. Burnell, in a lecture that he read at the Society of Arts, the Parisian municipality is simply a body charged with the execution of the projects that meet with the approval of the Emperor. As far as the individual opinions of that body are concerned, they weigh no more in the balance than the opinions of the lowest and least interested municipality in the country. The decision upon the measures that are designed for the improvement of Paris, in fact, are all arrived at in the council of the Emperor, and all attempts at interference are systematically disregarded. This was particularly shown on the occasion of rebuilding the Hôtel Dieu, which many of the members of the Town Council desired might be removed to better air, and to a more open space than on the island which is in the heart of the city. It is said that the advocates of this removal had even succeeded in carrying a resolution for that purpose, but the Emperor thought that the retention of the hospital in its present position was, for reasons only known to himself, more advisable, and the resolution of the Town Council was set aside accordingly. The same kind of thing has also taken place in respect to the recently executed town improvements that have been designed, it appears, more with reference to the æsthetical fancies of the Emperor and those around him than with reference to the wants or the means of the population of Paris. The consequence has been, that the cost of living in Paris has been augmented until it really exceeds that of living in London, in consequence of the increase of the town dues; and the resources of the town have been mortgaged to an awful extent; so much so as, in fact, to cripple the town in every attempt to improve the means of attaining the healthiness and the comfort of the inhabitants. The Rue de Rivoli, the Boulevard Sebastopol, the prolongation of those boulevards through the densest part of the houses in the southern part of the town, the various other streets that have been lately pierced in every direction, are, no doubt, great and manifest improvements; and, what is more, they have been executed at a cost that is comparatively little to English notions. But all this is gained at the expense of the means of cleanliness and comfort of the inhabitants. The drainage cannot be completed, the water supply cannot be perfected, the gas service cannot be performed in a cheaper manner than it is at present; and all attempts at the improvement of those branches of the municipal administration are systematically discouraged; the alterations in the streets or ways of the town are conducted on principles that no one can understand. In fact, the Paris improvements are managed utterly without reference to the wants or the requirements of the population of that city.

It cannot be denied that the kind of uniformity that marks the Parisian administration produces results that contrast favourably with those attending the divided government of the London parishes. The roads are better kept, they are better swept and cleaned, they are in no case marked by the differences of systems adopted in the various parishes, the lighting is better managed, and the street-lamps are not so much exposed to variations from the perpendicular as they are in London. But all these symptoms of bad government are not forcedly inherent to the system that prevails with ourselves; they might easily be remedied by a concentration of the powers of the various vestries; and the remedy for the present state of things would be to unite several parishes, so that the roads and footpaths that form the common object of their care should be under the management of the same body. This has, to a certain extent, been already effected by the creation of the Metropolitan Board of Works, and all that is required is to extend the attributions of that body, so that it might take the maintenance of the roadways under its care. But this is only a small evil compared with the absence of the control that is exercised by individuals over the proceedings of the body charged with superintending the outlay of the public funds. It is notorious that, under the Parisian system, the principal streets are the object of especial care, and their maintenance is conducted with what the French would call a luxury of attention; but the same attention is not paid to the maintenance of the secondary streets, and they are abandoned to themselves in the most disgraceful manner. The streets and ways about the Court-end of the town and leading to the great railways, or by the side of the river, are no doubt well kept and lighted. It is very different with the means of communication in the outlying quarters of Paris, and the traveller who is condemned to venture upon the roads that are supposed to serve the neighbourhood of that town could tell a very

different tale to that which foreigners generally do of the practical effect of the French system. But it is to the absence of the spirit of self-government that we principally object in all that relates to these affairs. No one feels himself authorized to call in question the conduct of the Government engineers, for it must be observed that the Paris municipal works are under the control of the *Ingénieurs des Ponts et Chaussées*, who are detached from the service of the State, but retain their rank and position in that body; so that they retain all the *prestige* of their position, and they enjoy all the exceptional powers which usually attach themselves to the officers of the State. This is, indeed, a real and a serious danger, for the actions of the *Ingénieurs des Ponts et Chaussées* are not amenable to the ordinary laws of the country, but must be pursued by the permission of and in the courts of the *Conseil d'Etat*; and, of course, it is not every one who will run the risk of a pursuit against the *employés* of the Government when the decision is left to the members of that body, who are thus judges, jury, and advocates in their own cause. The necessity for the approval of the *Conseil des Ponts et Chaussées* for every improvement or alteration in the style of works is, also, a serious drawback to the efficiency of this administration. Composed as that *Conseil* necessarily is of the oldest and most respectable men in the profession, they are, from their very position, likely to object to anything that savours of novelty, and they as naturally discourage anything like an innovation on the practice of their youth. It is to this kind of conservative principle, that is so strange in the midst of the democratic government of France, that we may attribute the incompleteness of the water supply and the drainage of Paris; for the old engineers have no confidence in the new-fangled notions of filtration and sewage irrigation; they dread the results of these experiments, therefore no one dares propose the execution of them, let them be ever so much wanted.

In the commencement of this article we said that "the "improvements lately executed in Paris were not founded on "any change in the habits or modes of thought of the inabi-"tants," and this must necessarily be the case whenever and wherever those improvements are forced upon the people who are charged with effecting them by a superior power. It is to this cause that we must attribute the shortcomings of the neighbouring capital in their sanitary works, and it is to the kind of incapacity to *think* that is superinduced by the habit of waiting for the initiation of all measures of improvement, that we attribute the deficiency of the French capital in everything connected with that branch of the municipal service. The arrangements for the removal of the dejections of human beings and the details of the water service are amongst the most elementary of that description of town duties, yet they are precisely the points most neglected in Paris. There may be reasons for the plentiful supply of water to the public fountains, but until the distribution of that fluid is made more perfect, until the water is no longer bought by the pail, the distribution cannot be considered to be at all what it ought to be. In England we neglect the means of making the water supply contribute to the health and enjoyableness of our towns, but we do provide the means of cleanliness to the inhabitants. In France they take care first of the supply of the fountains, and only devote the surplus to the individual wants. So with regard to the removal of the house sewage (to use that phrase). In England the municipal authorities, as a general rule, exercise great precautions to get rid of the refuse that is thus thrown upon their hands, but they neglect the condition of the roads and the public ways; in France, however, the latter are exclusively cared for, and the house drainage is left to chance. The knowledge of the wants of the people must always be greater amongst the representatives of the people themselves than it can be with the higher authorities, and the fault that lies at the root of the French system appears to us to consist precisely in the ignoring of that truth. The main error is, however, to be found in the utter incapacity that is superinduced by the French system of government, on the part of those submitted to it, to think and act for themselves. Government is thus erected into a sort of visible Providence, and is made responsible for the success of many things that do not come within the scope of its functions. The English system has, no doubt, many defects, but at least it leaves the inhabitants to bear the consequences of their own acts of commission and omission; they have only themselves to blame for the defective state of their municipal government, and they have been trained in the school of self-reliance and self-government, that are so much to be commended. In fine, though we think that in England we should gain much by a greater concentration of the powers and functions of the municipal bodies, we think that at any rate we should lose much by the introduction of the centralized system of France. The ultimate consequences of this state of things are more to be dreaded than the immediate effects, and it is to the annihilation of the spirit of free thought and action, which would be the inevitable result, that we look with fear and trembling upon the introduction of that system which seems to be threatened from the admiration of the results that Louis Napoleon has produced in the neighbouring capital.

Circular to Gas Companies.

The notice of application to Parliament for an Act relating to the supply of gas in the metropolis, given by order of the Board of Trade on the very last day allowed for giving parliamentary notices of Bills intended to be brought in next session, must have fallen like a thunderbolt on the metropolitan gas companies, and on all persons interested in their operations. The secret appears to have been well kept. Suspicion might, indeed, have been excited, by the frequent deputations from public bodies to the Home Secretary and the President of the Board of Trade, that some measure was concocting; but the gas companies do not seem to have taken any steps for their own protection, and there is now before the public the outlines of a scheme, sanctioned by the Government, for handing over to the management of the Board of Works, not only the thirteen metropolitan gas companies, but also the Brentford, the Crystal Palace District, the Eltham, the Mitcham, Merton, and Tooting, the Victoria Docks, the Wandsworth and Putney, the West Ham, and the two Woolwich Companies. The Board have as yet expressed no opinion whether they are inclined to accept the responsibility intended to be thrown upon them, and to burthen the ratepayers with the debt of £10,000,000 or upwards, which must be raised to purchase the undertakings of the existing companies. The subject was brought before them at their last sitting, and the notice was referred, without remark, to a committee for consideration. If the charge be thrust upon them by Parliament they will probably accept it coyly, and being aware that the supply of gas to the metropolis cannot, as in Manchester, be made a source of revenue for public improvements, they may feel disposed to decline the barren honour, which would bring with it a heavy burthen. Though the transfer of the supply of gas into the hands of the Metropolitan Board of Works is evidently the main object intended, the most prominent part of the parliamentary notice relates to a proposed amendment of the Metropolis Gas Act of 1860, as recommended by the select committee of last session; and some of the alterations indicated are of such a character that neither Mr. Hughes nor Mr. Flintoff could have suggested any more monstrous. They include among the propositions, the regulation of the quality and illuminating power of the gas, its pressure, and price; the mode of testing the gas, of keeping and rendering the accounts, their inspection, analysis, audit, and publication; the reductions of the capitals and borrowing powers of the companies, the limitation of their profits and dividends, and the repeal of the power to pay back dividends; the appointment of officers with full powers to enforce the foregoing regulations, and to provide for the payment of such officers by the companies; the regulation of the property in, and the execution of works relating to, gas-pipes, and to the compulsory supply of gas to the public lamps by average meter indication; the making of bye-laws by an order in council for the better regulation of the gas companies, and for ensuring a better and cheaper supply of gas; and, finally, the provision of a more summary recovery of penalties against gas companies. We refrain from commenting on these proposed "amendments" of the Metropolis Gas Act until the provisions of the Bill are duly set forth. In the meantime we publish a copy of the notice, over which the metropolitan gas companies may ponder in amazement. They have been strangely inert since the adverse report of the select committee, for it might have been anticipated that the vestries and the Corporation would follow up the advantage gained by urging the Government to act on it, and those bodies would no doubt endorse the recommendations of the committee with a list of alleged grievances which required redress. The gas companies have hitherto neglected

to represent their case to the Government, but the notice which we insert below cannot fail to rouse them into action. The proposition we ventured to make some years since of an amalgamation of all the metropolitan gas companies was not well received by them at the time, but they may have cause to regret they did not make arrangements among themselves for a combination of their interests to their mutual advantage and to the benefit of the public, instead of being compelled by Act of Parliament to sell their undertakings to the Metropolitan Board. It is to be feared, however, that timid holders of metropolitan gas shares may innocently further the objects which the promoters of the Bill have in view by rushing into the market, and thereby reducing their value. There can be little doubt that the market value of the shares in the several companies at the time any purchase may take place will exercise considerable influence on the price to be paid, and it is, therefore, to the interest of shareholders to sustain the market rather than to depress it by forcing sales, and aiding in the creation of a panic.

METROPOLIS GAS.—Amendment of Metropolis Gas Act, 1860, and of the local and personal Acts relating to the supply of gas in the metropolis and adjacent districts; reducing rates, charges, and dividends of gas companies; regulating future price, purity, illuminating power, and pressure of gas; compulsory purchase and sale of gas-works, and providing other gas-works; levying rates, and other purposes.

Notice is hereby given, that it is intended to apply to Parliament in the ensuing session for leave to introduce a Bill and to pass an Act for the following or some of the following among other purposes:—

To alter, amend, extend, and enlarge, or if need be to repeal the whole or some of the powers and provisions of an Act passed in the 23rd and 24th years of the reign of her present Majesty, c. 125, intituled "An Act for better regulating the supply of gas to the metropolis," and also to alter, amend, extend, and enlarge, or repeal the whole or some of the powers and provisions of the several local and personal Acts of Parliament following, or some of them, that is to say—50 Geo. 3, cap. 163; 54 Geo. 3, cap. 116; 56 Geo. 3, cap. 87; 59 Geo. 3, cap. 20; 4 Geo. 4, cap. 119, and all other Acts relating to the Gaslight and Coke Company; 57 Geo. 3, cap. 23; 22 and 23 Vic., cap. 52, and all other Acts relating to the City of London Gaslight and Coke Company; 1 and 2 Geo. 4, cap. 74; 10 Geo. 4, cap. 127; 10 and 11 Vic., cap. 53; 13 and 14 Vic., cap. 82; 15 and 16 Vic., cap. 155; 19 and 20 Vic., cap. 59, and all other Acts relating to the Commercial Gaslight and Coke Company; 5 and 6 Vic., cap. 36, and all other Acts relating to the Equitable Gaslight Company; 14 and 15 Vic., cap. 69, and all other Acts relating to the Great Central Gas Consumers Company; 10 Geo. 4, cap. 118; 27 and 28 Vic., cap. 162, and all other Acts relating to the Independent Gaslight and Coke Company; 15 and 16 Vic., cap. 82; 20 and 21 Vic., cap. 73; the London Gaslight Act, 1866, and all other Acts relating to the London Gaslight Company; 5 Geo. 4, cap. 78; 27 and 28 Vic., cap, 159, and all other Acts relating to the Phœnix Gaslight and Coke Company; 4 Geo. 4, cap. 98; 17 and 18 Vic., cap. 213; 18 and 19 Vic., cap. 12, and all other Acts relating to the Ratcliff Gaslight and Coke Company; 15 and 16 Vic., cap. 42; 17 and 18 Vic., cap. 94; 18 and 19 Vic., cap. 186; 26 and 27 Vic., cap. 37, and all other Acts relating to the Surrey Consumers Gas Company; 5 and 6 Vic., cap. 79; 28 and 29 Vic., cap. 14, and all other Acts relating to the South Metropolitan Gaslight and Coke Company; 1 and 2 Geo. 4, cap. 117; 4 Geo. 4, cap. 95; 10 Geo. 4, cap. 12; 17 and 18 Vic., cap. 55; the Imperial Gas Act, 1866, and all other Acts relating to the Imperial Gaslight and Coke Company; the Crystal Palace District Gas Company's Acts, 1858 and 1862, and all other Acts relating to that company; the Woolwich, Plumstead, and Charlton Consumers Gas Company's Acts, 1855 and 1865, and all other Acts relating to that company; and the Wandsworth and Putney Gas Act, 1856, the Wandsworth and Putney Gas Act, 1866, and all other Acts relating to the Wandsworth and Putney Gas Company; the Woolwich Equitable Gas Company's Act, 1855, and all other Acts relating to that company; the Brentford Gas Act, 1858, and all other Acts relating to the Brentford Gas Company; the Victoria Docks Gas Act, 1857, and all other Acts relating to the Victoria Docks Gas Company; the West Ham Gas Company's Act, 1856, and all other Acts relating to the West Ham Gas Company; the several Articles of Association and Acts relating to the Western Gaslight Company, Limited; the Articles of Association of and all Acts relating to the Eltham Gaslight and Coke Company, Limited; the Articles of Association of and all Acts relating to the Mitcham, Merton, and Tooting Gas Company; also to repeal all contracts and agreements entered into between the companies, or any of them, and any body or persons, for supplying gas, or for any other purpose.

To regulate and improve the quality and illuminating power of the gas to be supplied within the metropolis and adjacent districts, and the mode in which, and the pressure under which, and the price at which the gas shall be supplied, and the terms and conditions of the supply.

To regulate and improve the mode of testing the illuminating power and quality of the gas, and to provide for charging the expense attending the same on the gas companies and local authorities.

To regulate the voluntary and compulsory supply of gas and meters, and the amount, and payment, and recovery of gas-rents and meter-rents.

To alter and regulate the mode of keeping and rendering the accounts of the said gas companies, and to provide for the inspection, analysis, audit, and publication of their accounts.

To reduce and regulate the capital and borrowing powers of the said gas companies, or any of them, and to limit their profits and dividends, and rates of dividend, and rates of interest, and to repeal the power to apply surplus profits in the augmentation of previously declared dividends, and to alter and reduce the respective rates, rents, and charges of the said gas companies, and to create exemptions from the payment of such rates, rents, and charges.

To appoint officers for all or some of the purposes of the intended Act, and to confer on those officers full powers to enforce the provisions thereof, and to provide for the payment of such officers by the companies or otherwise.

To regulate the property in and the execution of works relating to gas-pipes, meters, lamps, and other apparatus for public lighting, and to compel the companies to supply gas for public purposes by average meter indication.

To provide for the settlement by arbitration or otherwise of all differences relating to any of the subject matters of the intended act or incidental thereto.

To authorize the making of bye-laws by an order in council or otherwise for the better regulation of the said gas companies, and for ensuring a cheaper and better supply of gas to the metropolis.

To provide for the more summary recovery of penalties against the gas companies.

To enable the Metropolitan Board of Works (hereinafter called the Board), and (within the City of London) the Commissioners of Sewers for the City of London (hereinafter called the Commissioners), or some other body or persons to be named in the Bill, to purchase and acquire compulsorily or by agreement the lands, sites, works, stations, mains, plant, rights, and interests, of all, or any one or more of the above-named companies, or of any other companies or persons manufacturing and supplying gas within the metropolis and the City of London, and to enable the Board, Commissioners, or some other body or persons, to enter into contracts and agreements with the above-mentioned or any other companies or persons for supplying the metropolis and the City of London and the respective districts adjacent with gas or other illuminating agents, and to exercise all or any of the powers now vested in the said gas companies, and all other necessary powers for manufacturing and supplying a better and cheaper supply of gas or other illuminating agents and also to make provision for the utilization of the residual products arising from the manufacture of gas, or otherwise relating thereto.

To enable the Board, Commissioners, or other body or persons, for the purposes of the intended Act, to apply any money belonging to them, or which they have the power to raise, and to enable them to borrow and raise other moneys upon mortgage or bond, or by such other means as shall be defined in the said Bill, and to provide for the repayment of the moneys so borrowed with interest, and for the above and other purposes of the Bill, to levy and collect rates, rents, dues, and charges upon the property and inhabitants within the metropolis and the City of London and adjacent districts, or any part or parts thereof respectively, and to enable the Board, Commissioners or other body or persons, and any of the shareholders or proprietors in the said companies, or either of them, to enter into arrangements for the substitution of bonds or other securities to be granted by the Board, Commissioners, or other body or persons, for shares or other securities, held by such shareholders or proprietors respectively, and to make other arrangements for paying off and satisfying the shareholders and proprietors in the said companies, and to enable the Board, Commissioners, or other body or persons, to use and apply the moneys so raised and borrowed, and to alter any existing rates, rents, dues, and charges, to confer, vary, or extinguish any exemptions from payment of rates, rents, dues, and charges, and to confer, vary, or extinguish other rights or privileges.

To enable the Board, Commissioners, or other body or persons, after having purchased the lands, sites, works, mains, and plant of all or any one or more of the above-named companies, to sell and dispose of the same, or any part thereof, and to use and apply the proceeds of such sale and other moneys in and towards the acquisition of other lands and works, and in the erection or providing of other works, either within or beyond the limits of the metropolis and the City of London for the manufacture, storing, and supplying of gas, and to connect such works with the mains and pipes already laid down in the metropolis and the City of London, and to enable the Board, Commissioners, or other body or persons, to lay down such other mains and pipes as they may respectively think fit.

And all other necessary powers will be inserted in the said Bill for carrying into complete effect the objects and purposes aforesaid.

And notice is hereby further given, that duplicate plans of the lands to be taken for the purposes of the said Bill, with a book of reference thereto, and a copy of this notice, as published in the *London Gazette*, will be deposited on or before the 30th day of November instant with the clerk of the peace for the county of Middlesex, at his office in Clerkenwell, in the said county; with the clerk of the peace for the City of London, at his office in the said City; with the clerk of the peace for the city and liberty of Westminster, at his office in the said city; with the clerk of the peace for the county of Essex, at his office in Chelmsford, in the said county; with the clerk of the peace for the county of Kent, at his office, in Maidstone, in the said county; and with the clerk of the peace for the county of Surrey, at his office, in Lambeth, in the said county; and that a copy of so much of the plans as relates to the several parishes in which the lands to be required are situate, and a book of reference thereto, and a copy of this notice, as published in the *London Gazette*, will on or before the said 30th day of November be deposited for public inspection as follows:—

So far as relates to the parishes of St. Marylebone, St. Pancras, Lambeth, St. George Hanover Square, St. Mary Islington, St. Leonard Shoreditch, Paddington, St. Matthew Bethnal Green, St. Mary Newington, Camberwell, St. James Westminster, St. James and St. John Clerkenwell, Chelsea, St. Mary Abbot Kensington, St. Luke Middlesex, St. George-the-Martyr Southwark, Bermondsey, St. George-in-the-East, St. Martin-in-the-Fields, Mile-End Old Town, Woolwich, Rotherhithe, St. John Hampstead, with the respective vestry-clerks of those parishes, at their respective offices. For the parishes of St. Mary Whitechapel, Christ Church, Spitalfields, St. Botolph Without Aldgate, Holy Trinity, Minories, Precinct of St. Catherine, hamlet of Mile-End New Town, Liberty of Norton Folgate, Old Artillery Ground, and district of Tower, with the clerk of the District Board of Works for the district of Whitechapel, at his office. For the parishes of St. Margaret and St. John the Evangelist, with the clerk of the District Board of Works for the district of Westminster, at his office. For the parishes of St. Paul Deptford, St. Nicholas Deptford, and Greenwich, with the clerk of the District Board of Works for the district of Greenwich at his office. For the parishes of Clapham, Tooting, Graveney, Streatham, St. Mary Battersea, Wandsworth, and Putney, with the clerk of the District Board of Works for the district of Wandsworth, at his office. For the parishes of Hackney and St. Mary Stoke Newington, with the clerk of the District Board of Works for the district of Hackney, at his office. For the parishes of St. Giles-in-the-Fields and St. George Bloomsbury, with the clerk of the District Board of Works for the districts of St. Giles, at his office. For the parishes of St. Andrew Holborn, above Bars, St. George-the-Martyr, St. Sepulchre, Saffron Hill, Hatton Garden, Ely Rents, Ely Place, and the liberty of Glasshouse Yard, with the clerk of the District Board of Works for the district of Holborn, at his office. For the parishes of St. Anne Soho, St. Paul Covent Garden, St. John-the-Baptist, the Precincts of the Savoy, St. Mary-le-Strand, St. Clement Danes, and the liberty of the Rolls, with the clerk of the District Board of Works for the Strand district at his office. For the parishes of St. Peter and St. Paul Hammersmith, and Fulham, with the clerk of the District Board of Works for the Fulham district, at his office. For the parishes of St. Anne Limehouse, St. John Wapping, St. Paul Shadwell, and the hamlet of Ratcliff, with the clerk of the District

Board of Works of the Limehouse district, at his office. For the parishes of All Saints Poplar, St. Mary Stratford-le-Bow, and St. Leonard Bromley, with the clerk of the District Board of Works for the Poplar district, at his office. For the parishes of Christchurch and St. Saviour, with the clerk of the District Board of Works for the St. Saviour's district, at his office. For the parishes of Charlton-next-Woolwich, Plumstead, Eltham, Lee, and Kidbrook, with the clerk of the District Board of Works for the Plumstead district, at his office. For the parish of Lewisham and hamlet of Penge, with the clerk of the District Board of Works for the Lewisham district, at his office. For the parishes of St. Olave, St. Thomas Southwark, and St. John Horselydown, with the clerk of the District Board of Works for the St. Olave district, at his office. And in the case of each of the following parishes of Mitcham, Merton, East Ham, West Ham, Plaistow, Upton, Forest Gate, Hudson Town, Wanstead, Holloway, Down, Leyton, Leytonstone, Little Ilford, Walthamstow, Woodford, Snaresbrook, Beckenham, Croydon, Old Brentford, New Brentford, Ealing, Hanwell, Isleworth, Twickenham, Heston, Acton, Chiswick, Hammersmith, Kew, Mortlake, Barnes, Richmond, Stepney, and Bow Common, with the parish clerk of each such parish, at his place of abode; and in case of each of the following parishes:—Precinct of Whitefriars, St. Bride, Precinct of Bridewell, St. Ann Blackfriars parish and precinct, St. Andrew by the Wardrobe, St. Benet Paul's Wharf, St. Peter, near Paul's-wharf, and St. Mary Magdalen, and any other parish in the City of London, with the parish-clerk of each parish, at his residence; and in case of any extra parochial place, with the parish-clerk of some adjoining parish, at his place of abode. In all or some of the hereinbefore-mentioned parishes or places, the lands intended to be acquired under the compulsory powers of the said Bill are situate.

Dated this 14th day of November, 1866.

By order of the Board of Trade,

WYATT and METCALFE,

28, Parliament Street, Westminster,

Parliamentary Agents.

The Corporation of the City of London have given notice of their intention to apply to Parliament with a renewal of their scheme of last session, with the addition of the power to purchase, by agreement or compulsion, all or part of the existing works or property of the Great Central, the Chartered, and of the City Gas Companies. The site of the proposed works is land in West Ham, East Ham, and North Woolwich, bounded on the south by the river Thames. This notice is evidently intended only as a guard behind the wicket, to give the Corporation a *locus standi* when the Board of Trade Bill is under consideration in committee, and as a counter project to that of the Chartered Gas Company. This and all other projects relating to the lighting of the metropolis would of course be rendered nugatory were Parliament to grant the extensive powers to the Metropolitan Board of Works proposed in the Government Bill. It is probable that the civic authorities may look with some jealousy at the plan for admitting the great rival local authority into the City, and of giving them the power to break open the streets, and otherwise interfere with the rights of the Corporation; and they may endeavour to have the City excluded from any general arrangement for lighting other parts of the metropolis. The introduction of their Bill would enable them to contend in support of their privileges, if threatened with invasion, and even should no ulterior objects be intended, the Corporation will obtain that advantage by giving the notice, of which the following is a copy:—

LONDON (CORPORATION) GAS.—Purchase of lands and erection of gas-works in the parishes of West Ham and East Ham, in the county of Essex, and the parish of Woolwich, in the county of Kent; power for the Corporation of the City of London to purchase by agreement or compulsion all or part of the existing gas-works and property of the Great Central Gas Consumers Company, the City of London Gas Company, and the Gaslight and Coke Company; power to manufacture gas; power to supply gas within the City of London and liberties; powers as to laying of pipes in certain parishes; amendments of Acts, and other purposes.

Notice is hereby given, that application is intended to be made to Parliament in the ensuing session for leave to bring in a Bill to authorize the mayor, aldermen, and commons of the City of London (in the notice called "the Corporation") to supply gas for public and private purposes, and to light with gas the City of London and the liberties thereof.

To authorize the Corporation to purchase, by agreement or by compulsion, the undertakings, or any of them, or any part of the respective undertakings of the Great Central Gas Consumers Company, the City of London Gaslight and Coke Company, and of the Gaslight and Coke Company, including all or any part of their gas-works, lands, property, estates, pipes, works, rights, powers, and privileges, and to require such companies respectively to sell their undertakings to the Corporation, or any portion or portions thereof which by the Bill they may be required to sell, and to prescribe the mode of settling the purchase money or compensation by arbitration or otherwise, and to vest the undertakings, or the parts thereof authorized to be purchased, in the Corporation, and to enable the Corporation to exercise all the rights and powers of the respective companies in relation to the undertaking, or part thereof, so purchased.

To authorize agreements between the Corporation and the respective companies, for purchase, by way of rent-charge, or otherwise.

To authorize the Corporation to purchase, by compulsion or by agreement, the lands, hereditaments, and premises following, or any of them (that is to say):—

The lands and buildings in the parish of West Ham, in the county of Essex, on part of which the petroleum stores of Messrs. Drew and Campbell are erected, bounded on the south by the river Thames, on the north by the North Woolwich Road, on the east by marsh land, and on the west by other marsh land.

The lands, houses, and premises in the parish of Woolwich, in the county of Kent, bounded on the south by the river Thames, on the north by the North Woolwich Branch of the Great Eastern Railway, on the west by a manufactory of leather cloth, now in the course of construction, and on the east by the western boundary of Henley's manufactory of electric telegraph wires.

Also a piece of land of about 40 acres, situate partly in the parish of Woolwich, in the county of Kent, and partly in the parish of East Ham, in the county of Essex, bounded on the south partly by a private road, and which private road adjoins and is situate on the north side of the North Woolwich Branch of the Great Eastern Railway, and partly by the northern boundary of property belonging to the Kent Freehold Land Company, on the north by the southern boundary line of the property of the London Docks Company, on the west by a drain, being the boundary between the parishes of East Ham and West Ham, in the county of Essex, and by a drain being the boundary between the parish of North Woolwich, otherwise Woolwich, in the county of Kent, and the parish of East Ham, in the county of Essex; and on such lands, or any of them, or any parts thereof, to erect and maintain gas-works, gasometers, retorts, machinery, apparatus, buildings, approaches, roads, works, and conveniences, and to manufacture gas and the several matters produceable from the residual products arising or resulting from the manufacture of gas, and generally to carry on the operations and works which are carried on by corporations and companies who manufacture and supply gas for public and private lighting.

To authorize the Corporation to supply gas for lighting the public streets, thoroughfares, passages, and places of the City of London and liberties thereof, and to supply and sell gas to the inhabitants and occupiers of property in the said City and liberties, and for lighting public and private buildings, shops, and warehouses, manufactories, railways, railway stations, docks, quays, wharves, bridges, and works, and for any other purposes; and to break up and interfere with streets, roads, lanes, bridges, and other passages and places, and sewers, drains, and pipes therein, and to lay down, place, and maintain gas-pipes, lamps, pillars, and posts, and to manufacture, supply, hire, sell, and let gas-meters, fittings, and gas apparatus; and to levy and collect rates, rents, and charges for the sale and supply of gas, gas-meters, fittings, and apparatus, and to hold and acquire patent rights or licences to use patent rights in relation to the manufacture and distribution of gas, and the utilization of residual products, and to enter into contracts for a supply of gas with the Commissioners of Sewers for the City of London, and any local authorities or public departments, and generally within the City of London and liberties thereof; and also for manufacturing and storing gas, and for bringing the same for distribution from the gas-works to the City, to exercise all such powers and authorities as may be given to the Corporation by the intended Bill.

To authorize the Corporation to lay down and maintain gas-mains for the passage of and for conveying gas from the intended gas-works to be erected at the sites before described into the City of London for distribution, and to purchase by compulsion or agreement for such purposes lands and houses within any of the parishes and places herein mentioned. The principal lines of such gas-mains to commence at the gas-works as before described as intended to be erected in the said parishes of West Ham, East Ham, and Woolwich, and to pass through the following parishes, hamlets, or places, or any of them, that is to say, the parish of Woolwich, in the county of Kent, East Ham, in the county of Essex, West Ham, in the county of Essex, St. Leonard's, Bromley, All Saints, Poplar, St. Ann's, Limehouse, hamlet of Ratcliff, in the parish of St. Dunstan, Stepney, hamlet of Mile-End Old Town, in the parish of St. Dunstan, Stepney, St. George's-in-the-East, St. Mary's, Whitechapel, all in the county of Middlesex, and to terminate at the boundary of the City of London in Aldgate High Street, with a branch line of gas-mains commencing from the principal lines in the Commercial Road, in the hamlet of Ratcliff, in the parish of St. Dunstan, Stepney, near the Stepney Railway Station, and passing through that hamlet and the parishes of St. George's-in-the-East, St. Paul's, Shadwell, St. Mary's Whitechapel, and St. Botolph, Aldgate Without, all in the county of Middlesex, and St. Botolph, Aldgate, in the City of London, and terminating at Sparrow Corner, in the City of London, near Little Tower Hill.

And also to authorize the Corporation to cross over or under any river, canal, railway, or to use any bridge over the same, and to break up and use any street, road, bridge, highway, passage, or place in those parishes, hamlets, and places lying between the sites of the proposed gas-works and the City, and for the purposes of laying down and maintaining such gas-mains for the conveyance of gas, to confer on the Corporation the powers with or without modification contained in "The Gas-Works Clauses Act, 1847."

To authorize the Corporation to borrow money for the purposes of the Bill on mortgage, bond, annuity, or otherwise, and apply for those purposes the funds and moneys under their control, and to charge moneys borrowed on their corporate estates, revenues, rates, and rents belonging to or levied by them, and on the estates to be purchased, and the revenue, rates, and rents to arise or be levied under the Bill, and to apply the rents, rates, and profits of the gas-works to the purposes of the Corporation.

To extend and apply to the purposes of the Bill the provisions or any of them of the Gas-Works Clauses Act, 1847, and the Metropolis Gas Act, 1860, or wholly or partially to exempt the Corporation from any of the provisions of those Acts or either of them, or to modify or alter the same with reference to all or any of the objects of the Bill, and to vary or extinguish any rights and privileges thereunder, or any other Act or Acts, letters patent, charters, or otherwise.

To alter, amend, or repeal all or some of the provisions of the Acts (local and personal) 50 Geo. 3, cap. 163; 54 Geo. 3, cap. 116; 56 Geo. 3, cap. 87; 59 Geo. 3, cap. 20; and 4 Geo. 4, cap. 119, relating to the Gaslight and Coke Company; and also the Act (local and personal) 22 and 23 Vic., cap. 52, relating to the City of London Gaslight and Coke Company; also the Act 14 and 15 Vic., cap. 69, and any other Acts relating to those companies, and to dissolve such of the said companies the whole of whose undertakings are purchased under the powers of the Bill.

To authorize the compulsory purchase of lands and houses for the purposes of the Bill, and the acquiring compulsorily of easement in lands and the taking of lands by agreement, and to vary or extinguish all rights and privileges interfering with the objects of the Bill, to alter rates and vary and extinguish exemptions from rates, and to confer exemptions from rates, and to make provision for all matters necessary or incidental to the objects of the Bill.

Plans describing the lands and houses to be taken compulsorily under the powers of the Bill, and books of reference to the plans, and a copy of this notice, as published in the *London Gazette*, will, on or before the 30th day of November instant, be deposited for public inspection with the clerk of the peace for the county of Middlesex, at his office at the Sessions House, Clerkenwell Green; with the clerk of the peace for the county of Essex, at his office at Chelmsford, in the said county; and with the clerk of the peace for the City of London, at his office in the Old Bailey; and with the clerk of the peace for the county of Kent, at his office at Maidstone. And on or before the same day a copy of this notice, and of so much of the said

plans and books of reference as relate to any of the parishes, hamlets, or places aforesaid, in which any lands or houses intended to be taken are situate, will be deposited as follows:—With respect to the parishes of East Ham and West Ham, with the respective parish-clerks of such parishes, at their residence; with respect to any parish in the city of London, with the parish-clerk of each parish, at his residence; with respect to the parish of Woolwich, with the clerk of the vestry of that parish, at his office in that parish; with respect to the hamlet of Mile-End Old Town, with the clerk of the vestry of that hamlet, at his office in that hamlet; with respect to the parish of St. George's-in-the-East, with the clerk of the vestry of that parish, at his office in that district; with respect to the parishes of St. Leonard, Bromley, and All Saints, Poplar, with the clerk of the District Board for the Poplar district, at his office in that district; with respect to the parish of St. Ann's, Limehouse, the hamlet of Ratcliff, and the parish of St. Paul's, Shadwell, with the clerk of the District Board for the Limehouse district, at his office in that district; with respect to the parishes of St. Mary, Whitechapel, and St. Botolph Without, Aldgate, with the clerk of the District Board for the Whitechapel district, at his office in that district.

Printed copies of the intended Bill will be deposited in the Private Bill Office of the House of Commons on or before the 22nd day of December next.

Dated this 14th day of November, 1866.

WILLIAM CORRIE, Guildhall,
Remembrancer.

DYSON and Co., 24, Parliament Street,
Parliamentary Agents.

The Imperial and the Chartered Gas Companies have also published their notices of intended applications to Parliament to authorize the purchase of new sites for their works, and for additional powers. The site selected by the former company for a western station is on the bank of the Grand Junction Canal, close to the North and South Junction Railway, about one mile and a half beyond the works of the Western Gas Company, at Kensal Green. It is an excellent site for gas-works, and should have been occupied for that purpose years ago. But the consideration of these and of all other schemes connected with the gas lighting of London, must be postponed until the grand consolidation scheme of the Board of Trade has been considered and disposed of.

The Metropolitan Board of Works, in ignorance of the important duties proposed to be thrust upon them by the Board of Trade, thought that this was a favourable time for renewing their attempt to compel gas and water companies to use the subways they have constructed, and accordingly have given notice of their intention to promote a Bill for that purpose in the ensuing session. The powers proposed to be conferred by the Act, if the notice be taken as correctly expressing its object, are so extensive as to put a stop to the supply of gas and water in all parts of the metropolis not provided with subways. The Metropolitan Board of Works seek to be empowered not only to require gas, water, and telegraph companies to make use of the subways now formed, and in the course of completion, but to remove the pipes already laid down in streets where subways may be hereafter constructed. In the words of the notice, the Act will contain provisions "to restrict "the breaking up of the pavement of any street, roadway, or "thoroughfare, or place within the metropolis, beneath which "any subway has been already provided by the Metropolitan "Board of Works, *or may hereafter be provided* by that Board." Other provisions are mentioned for authorizing the Board to remove pipes already laid, to prohibit the maintenance of them in streets where subways may hereafter be made, and to enforce the observance of such provisions "by the imposition "of penalties or otherwise." In conclusion, all rights and privileges of any company, society, corporation, or persons which would interfere with the objects of the intended Act are to be extinguished. Should the Metropolitan Board be invested with the power of lighting London with gas, the pipes would be under their control, and they might think they had a right to do what they liked with their own; but they would not, even then, have the right to endanger the lives and the property of the public by indulging the attempt to carry out a theoretical scheme which experience has proved to be unsafe. The question was fully considered by a committee of the House of Commons in 1864, and much evidence in favour of and against placing gas-pipes in subways was adduced. The advocates of the plan relied principally on the public convenience of having the mains placed where they could be always accessible without disturbing the pavements, while those who opposed it brought witnesses to prove the dangerous effects that had been produced wherever gas-mains had been laid in tunnels and subways, particularly in Paris, where numerous explosions have occurred in consequence of the adoption of that plan, which has since been abandoned, and the pipes have been removed from the subways. Among the objections urged before the committee it was stated that the work of laying mains in dark, ill-ventilated tunnels cannot be so efficiently done as in the open air, with the light of day; that the risk of leakage from imperfect joints is increased; that the confined space of a tunnel might even become filled with an explosive mixture of gas and air, and that the effect of the explosion of gas in a tunnel under a great public thoroughfare would be most destructive. It was urged that it would be a fearful set-off against the convenience of depositing the mains in galleries underground if it were attended with the danger of converting the subways into explosive mines, that might at any moment blow up the pavement, destroy the lives of the passengers, and even bring down the houses on the heads of the inhabitants. The evidence satisfied the committee there would be great danger in the adoption of that plan, and they resolved to strike out gas-pipes from the preamble of the Bill, and thereupon the Metropolitan Board determined to withdraw it. Nothing that we are aware of has since occurred to diminish the danger of such a proceeding, nor to induce the Board to think that another committee of the House of Commons would be less anxious to prevent the possibility, if not the probability, of such fearful destruction as would be occasioned were an extensive subway, filled with an explosive mixture of coal gas and air, to ignite.

The return moved for last session by Captain Gridley respecting the gas companies of the United Kingdom has just been issued. The order was for a statement from every gas company established by Act of Parliament of the Acts under which they were established, the rates per 1000 feet charged for gas in the years 1864 and 1865, the average price paid for coal, and also the amount of fixed capital, and the rate per cent. of dividends to the shareholders in those years. The order has been responded to by 157 gas companies incorporated by Act of Parliament, by thirteen Local Boards and Town Councils, and by three companies which have no special Acts. It is the most complete return yet made by gas companies, and furnishes much interesting information, though it would have been rendered more complete had the quantities of gas per annum supplied by each company, and the illuminating power, been specified. In the returns of the fixed capitals also there is a degree of uncertainty, for some companies have included the borrowed money in their statements, and others have excluded it. In respect of the price charged per 1000 feet of gas, Plymouth continues to be lowest on the list; the charge for 12 or 13 sperm-candle gas being only 2s. 9d., but if the quantity of *light* supplied be taken into account, the gas consumers of Liverpool, who pay not more than 3s. per 1000 feet for gas that possesses an illuminating power of 20 candles, enjoy much greater advantages. Nottingham also stands well, with prices varying from 2s. 9d. to 3s., according to the quantity consumed, for gas of an illuminating power of 15 or 16 candles. Compared with those places, and indeed when compared with many other large towns in the kingdom, the gas supplied by local authorities occupies an unfavourable position. The Corporation of Manchester have sent no return, but the gas supplied by the local authorities at Stockport is charged 4s., at Birkenhead 5s., at Bury 4s. 6d., at Congleton 4s. 6d., at Macclesfield 4s., at Oldham 4s., and at Middleton 5s. per 1000 feet, at every one of which towns coal is obtained at prices varying from 6s. to 10s. per ton. The gas consumers who are supplied from Corporation gas-works have not, therefore, much reason to rejoice at being so circumstanced. Appended to the return is what may be called a "black list" of places from which no returns have been received. The companies at some of those places named are extinct, in other instances the gas-works are in the hands of Corporations and Local Boards, and some companies have leased their works and are consequently not in a position to make a return.

We understand that a meeting of Scotch cannel coal proprietors has been recently held in Glasgow, at which it was resolved to raise the price of Scotch cannel 25 per cent., on the ground of the great "demand for this material for "raising the quality of the gas produced from common coal, "and the limited quantity that can be raised." The cannel coal proprietors in Lancashire will, in all probability, shortly follow the example of those in Scotland. We thus see gradually developing the difficulties into which gas companies will be brought by the regulations forced on them, in accordance with Lord Redesdale's dictum, as to the minimum illuminating power, in all the gas Acts recently passed. To insist on the gas supplied having a higher illuminating power than can be produced from the best ordinary coal, when the quantity of available cannel is rapidly becoming exhausted, and at the same time to require the price of gas to be reduced, must

ere long have a serious effect on the gas companies subjected to such conditions. We trust that the great advance in the price of cannel and its increasing scarcity will open the eyes of parliamentary committees to the consequences of continuing such a course of legislation, which must, if persevered in, ultimately bring the supply of gas to a dead-lock.

The Gas Committee of the Manchester Corporation have firmly resisted the demands of the men who struck for an advance of sixpence a day on their wages. All the men, we are glad to say, have returned to work on the former terms, and an ample supply of gas is now provided for all who require it.

Register of New Patents.

1026.—George William Shinner, of the Strand, in the co. of Middlesex, for "*Improvements in the means of and apparatus for utilizing sewage matters and liquids.*" Provisional protection only obtained. Dated April 10, 1866.

In performing this invention it is proposed to form a tubular branch or branches with the main sewer, in order to convey the sewage matters and liquids to a suitable building in which the apparatus for utilizing the same is to be arranged. Such branch or branches, before entering the building, is or are passed through a reservoir for the purpose of discharging the contents of the sewer on the occurrence of a storm or heavy fall of rain. This is effected by means of a valve in the branch passing through the reservoir; the branch-pipe then enters the building, and is connected to a hinged guiding-trough, which conducts the sewage over one, two, or more tanks of galvanized iron, having moveable strainers placed on their surfaces; these tanks are capable of being lifted out of an outer series of fixed tanks by means of chains travelling over pulleys in the roof of the building, and by winch gearing. These outer tanks or jackets are surrounded by a low dwarf wall, forming four sides of a brick tank, having a cage containing gravel along the top thereof. Around the wall a sunken gutter is formed, 2 inches below the level of the dwarf wall, in order to conduct the liquid to a fall, and underneath an upward filter-bed through which the liquid percolates and passes beyond on to a perforated floor, through which the liquid falls on to a downward chemical filter-bed, and thence to a leading-off drain. The inner tanks when lifted are passed on to a tramway; they are provided with small running wheels, in order to travel on the tramway, whence they are tilted over and discharge their contents into a sifting-house, where foreign substances are separated from the sewage matter, which is ultimately conveyed to a preparing-house, and dried and treated as required for use, and packed in sacks or barrels. In order to withdraw the sewage from the reservoir pumps are employed, and the sewage is conveyed to the tanks and filtering apparatus.

1062.—George Thomas Blundell, of 7, Conant Place, West India Dock Road, Limehouse, in the co. of Middlesex, for "*Improvements in screw-valves for water-closets.*" Provisional protection only obtained. Dated April 14, 1866.

This invention has reference to screw-valves for regulating the supply of water to water-closets, and consists in constructing them with a particular description of conical plug, fitting a corresponding conical set stud in or across the flow or passage-way for the water, and made to move into or away from the seat (for opening or closing the valve) by turning the stem or spindle of the plug, the said stem or spindle having a quick threaded screw thereon, which works through a screwed bush or nut.

The particular description of conical plug consists in its being constructed with its effective or working end or conical portion made as a conical ring or hollow cone, and with the stem conically fitted into and capable of being turned round within the ring or hollow cone, thereby allowing the plug to be pressed forward into the seat, or to be withdrawn by turning the stem, without the necessity of turning the ring or hollow cone. A handle, or lever, or hand-wheel may conveniently be fitted to the stem, for the purpose of turning it.

1084.—John Dickinson the younger, of the city of York, plumber, for "*Improvements in cocks or taps for high pressure, hot and cold water, and for kitchen ranges.*" Patent dated April 17, 1866.

The exterior of the tap is similar to those in ordinary use, but the handle works with a screw-thread cut on the stem, which passes through a stuffing-box set between two flanges on the upper part of the tap. The inlet is made with a boss or collar, so that the tap may be applied to an iron or leaden pipe. The valve is applied at the bottom of the tap, and is of brass, ground to fit the valve-seat, and made with a screw bottom, so as to permit of easy access to the valve for the purpose of repair, without the necessity of disconnecting the tap from the pipe. By means of the screw-handle, the opening of the valve may be regulated to the greatest nicety; and, when subject to high pressure, the valve is entirely under the control of the screw, and cannot be forced open by the pressure, neither can any escape or leakage occur between the screw and flanges by reason of the intermediate stuffing-box.

1116.—John Leigh, of the city of Manchester, in the co. of Lancaster, for "*Improvements in the purification of coal gas.*" Patent dated April 20, 1866.

1. Gas liquor or ammonia water is used in its ordinary crude state—that is to say, as it is ordinarily produced in the manufacture of coal gas—and concentrated by distillation, and the gas is treated therewith. The word "treated," in this case, means that the gas liquor so concentrated is to be injected into the ordinary scrubbers, washers, or other similar vessels, so as to fall off in showers into the current of gas which, as it is manufactured, is passing through the scrubbers. Or the concentrated gas water may be absorbed by sawdust, coke, pumice-stone, or other dry porous material, and placed in the ordinary lime or copperas purifiers, and the gas passed through the coke, sawdust, pumice or dry porous material so saturated

2. Or the crude ordinary gas liquor or ammonia water is treated with quick lime, thereby depriving the ammonia water of its carbonic acid, and concentrated by distillation. The word "treated" here means simply that the gas water is to be mixed and agitated with the lime, until the carbonic acid is removed from the gas water.

3. Or the crude or ordinary gas liquor or ammonia water is treated with the spent refuse lime of gas-works, which has previously been used for the purification of gas from sulphuretted hydrogen, thereby depriving the ammonia water of a portion of its carbonic acid, and imparting to it a portion of sulphur. This liquor is concentrated by distillation. The word "treated" here means that the gas water is to be mixed and agitated with the spent or refuse lime of gas-works till the gas water is deprived of a portion or all of its carbonic acid.

The distilled and concentrated gas water prepared by the first method may be treated by quick lime, or by the spent or refuse lime of gas-works after the distillation and concentration. "Treated" here means mixed and agitated, as before described.

To the distilled and concentrated gas water prepared by the second and third methods it is preferred to add a portion of sulphur which will dissolve therein, and by which the energy of its action on bisulphide of carbon is increased. Or the crude gas water is distilled in a suitable boiler, and the vapour or steam evolved on distillation is passed into a vessel containing a quantity of spent lime—that is, lime which has been used for the removal of the sulphuretted hydrogen from coal gas—such lime being contained in a vessel, which is heated or otherwise, but by preference heated, as the decomposition which is sought to be effected between the spent lime or refuse lime and the distilled ammonia water or gas water more readily takes place, and the product is more easily removed at an elevated temperature than at ordinary temperatures. The product is then carried forward to a suitable condensing vessel or apparatus, and may be injected into the ordinary washers used in the purification of coal gas by the use of pumps, as now ordinarily practised in the use of common undistilled and unconcentrated gas water. Or the crude gas water is distilled through a quantity of the refuse or spent lime of gas-works, such lime being arranged in layers, or in such mode as that the steam or vapour of the ammonia water or gas may pass through the spent or refuse lime, and may be more or less decomposed thereby; that is to say, that the carbonate of ammonia in the vapour or steam of the distilled gas water may impart a portion of its carbonic acid to the lime, and may receive from the latter a portion of sulphur.

The sulphuretted vapour or steam of the gas water is then carried forward in a suitable manner to the washers or condensers ordinarily used in the washing or purification of coal gas, and therein mixed with the gas to be purified. The mixed gas and vapour is to be afterwards passed through a suitable condenser, and the liquid regained. The claim is for the use of distilled and concentrated gas water or ammonia water, whether such ammonia water or gas water be—

1. Distilled and concentrated in its ordinary crude state—that is, as it is ordinarily produced in the manufacture of coal gas; or—

2. Previously cauticized by the addition of lime to the gas water, so as to remove carbonic acid therefrom, and then concentrated by distillation, or—

3. By treating the crude ordinary gas liquor, or gas water, or ammonia water, with the spent lime or refuse lime of gas-works—that is, the lime which has been previously used for the purification of gas—so as thereby to deprive the ammonia water of a portion of its carbonic acid, and add a portion of sulphur.

4. The distilled and concentrated gas water, as prepared by the first method, and treated by quick lime or by the spent or refuse lime of gas-works—that is, after the distillation and concentration, and,

5. The use of distilled and concentrated gas water, however prepared, and whether cauticized or sulphuretted before or after distillation.

1120.—George Haseltine, of 8, Southampton Buildings, Chancery Lane, in the co. of Middlesex, civil engineer, for "*An improved mode and means for lighting and extinguishing street and other gas-lamps and burners.*" A communication. Provisional protection only obtained. Dated April 20, 1866.

This invention consists chiefly in the application of clock-work to open and close the stop-cock of a street or other gas-lamp; also in the means whereby chemical or other agents are caused to ignite the gas as it escapes from the burner. The invention also consists, partly, in so constructing and arranging the mechanism, that when properly wound up and set going it will perform the several operations of opening and closing the cock and igniting the gas at the burner at any desired hour of the day or night, which hour is indicated by a suitable index and dial.

A small clock, similar to any ordinary timepiece, is enclosed in a weather-proof metallic case or box. One side of this case may be made in the form of a dial, and will serve as a timepiece. This box or case is placed at the bottom or other convenient part of the lamp, and the mechanism therein is connected with the stop-cock which controls the admission of the gas to the burner in such a manner that it can be set to open or close the said cock at any desired time. A revolving wheel or disc, carrying eight or more charges of chemical or frictional matches, is arranged near the orifice in the burner. This wheel is so connected with the clock-work that once in about 24 hours it is suddenly moved forwards one-eighth part, or less, of its revolution. By the movement of this wheel sufficient heat is generated, either by the friction of a match or by ejecting one charge of the chemical compounds, to ignite the gas escaping from the burner. The revolving wheel is so connected with the other portions of the mechanism as to turn only when the stop-cock is opened. Adjustable stops are employed in connexion with the lighting device, and the other parts of the apparatus, and so arranged that the gas may be turned on at the burner and lighted either early or late in the evening, and turned off either early or late in the morning.

1156.—George Fitzjames Russell, of Piccadilly, in the co. of Middlesex, and William Henry Carbines, of Southwark Street, in the co. of Surrey, for "*Improvements in the manufacture of gas.*" Patent dated April 24, 1866.

This invention relates to certain improvements in the manufacture of gas applicable to lighting and heating purposes. It is proposed to use for

the production of carburetted hydrogen gas cocoa-nut shells, fir cones, beech nuts, acorns, shells of Brazil nuts, and other shells of nuts with or without the contents of such shells, and in any combination whatever. These are placed in a retort of cast iron, and subjected to a sufficient degree of heat to cause the gas evolved in their decomposition to pass off. From the retort the gas is conducted to the purifier containing lime water or other purifying agent, whence the purified gas is conveyed to a gasometer in a condition suitable for use for lighting and heating.

The retort may be composed of earthenware if preferred, the materials from which the gas is evolved being of so low a specific gravity. After the gas is obtained from the cocoa-nuts, fir cones, or other materials named, the production of ammoniacal liquor commences, consisting chiefly of hydrocarbons and oils, the ultimate result being charcoal of a very superior quality suitable for various useful purposes. The shells may either be dried before being placed in the retort, or, if containing moisture, a condenser must be used in order to withdraw the steam from the gas.

The gas produced from the before-mentioned materials will require but little purification, its passage through the lime water or other purifying agent being amply sufficient, and the amount of carbon evolved in the retort will be found ample for the production of a brilliant light. The whole of the gas will be consumed, and there will consequently be no escape of deleterious vapours such as occur in the use of ordinary coal gas, where sulphuretted hydrogen is given off during the process of burning.

The claim is, the application for the purpose of the manufacture of gas of cocoa-nut shells, cocoa-nuts, or other nut shells or nuts, such as beech nuts, Brazil nuts, or others, fir cones, and acorns, substantially, as herein specified.

1157.—Charles Denton Abel, of 20, Southampton Buildings, Chancery Lane, in the co. of Middlesex, patent agent, for "*Improvements in joints or connexions for pipes.*" A communication. Provisional protection only obtained. Dated April 24, 1866.

This invention consists in joining together the ends of pipes by means of rings or short tubes of india-rubber or other suitable elastic material so formed and arranged in combination with a peculiar formation of the ends of the pipes that a water, steam, or gas-tight joint is thereby produced, which, while it allows of any lateral or longitudinal motion of the pipes at such joint, will become all the more water, steam, or gas tight the greater the internal or external pressure exerted thereon may be.

1162.—Alfred Upward, of the Chartered Gas Company, 146, Goswell Road, in the co. of Middlesex, civil engineer, and the Honourable Arthur Auckland Cochrane, of Westminster, for "*Improvements in the manufacture of gas.*" Patent dated April 25, 1866.

Heretofore in the manufacture of gas, when working with coal which yields a gas of comparatively low illuminating power, it has been common to mix Boghead mineral or rich cannel coal with the other coal, and charge the gas-retorts with the mixture. In this way the illuminating power of the gas was much improved. Boghead mineral and rich cannel coals have, however, risen to so high a price that this is hardly practicable at the present time. It has been discovered that efficient substitutes for Boghead mineral and rich cannel coal for use in this manner are the natural bitumens such as are found in Trinidad. In Trinidad they appear to rise from the earth in a semi-fluid state, and afterwards, on exposure to the air, become solid. They for the most part melt with little or no decomposition on the application of a moderate heat, except when they are contaminated with a large proportion of earthy matter. Similar bitumens to those found in Trinidad are also found native in other places. This Trinidad or such like bitumen is mixed with the coal, say in the proportion of four parts of coal to one of bitumen; the gas-retorts are charged with this mixture, and it is distilled as usual in the manufacture of gas.

The natural bitumens employed differ essentially from cannel coal and other such like materials, which have heretofore been used with ordinary coal in gas-making. Natural bitumens, such as are here employed, when immersed in a solvent—say benzole—lose their form, and for the most part dissolve, which is not the case with cannel coal and such like material.

1163.—George Edward Noone, of 50, George Street, Hastings, in the co. of Sussex, civil engineer, for "*Improvements in machinery and processes for deodorizing and treating sewage and other refuse, and manufacturing therefrom manure and other substances for chemical and other uses.*" Patent dated April 25, 1866.

This invention relates to certain improvements upon the machinery and process or processes set forth in the specification of letters patent granted to the present patentee on the 14th of November, 1864, No. 2832, by which improvements a large amount of ammonia is secured in the form of sal ammoniac, or other ammoniacal salt, and the fertilizing constituents of sewage are effectually separated from grit, sand, stone, and other matters of little value, while from the greater efficacy of the manure, and its diminished bulk, and corresponding advantage ensues to the agriculturist in its application to the soil, as well as economy in its transit. In the present invention lime or lime liquor is used with or without soda or potash, with the application of heat for the purpose of freeing the ammonia and hydrochloric or other acids, to condense the same into sal ammoniac in solution; also sulphate of lime and other known filtering substances placed in proper chambers, in pipes or hydrants, for the purpose of causing the removal of all solid matter suspended in the weaker sewage which may not be pumped up to wash the solid and extract the ammonia.

1182.—Edward Holden, of Bradford, in the co. of York, wool comber, for "*Improvements in means or apparatus for effecting the ventilation of rooms and other places.*" Provisional protection only obtained. Dated April 27, 1866.

The object of these improvements is to obtain a constant change of air in rooms or other places. For this purpose there is applied to the upper part of such rooms or other places, and so as to communicate with the external atmosphere, tubes, placed vertically one within and concentric to the other, and care is taken that the area of the inner tube is considerably greater than the area of the annular space left between that inner tube and the outer one, by which means change of air is obtained without the inconvenience of a downward draught. The relation of 22 inches internal diameter of the inner tube to 27 inches internal diameter of the outer tube is found to answer well, but these may be varied. Tubes or passages from different rooms may be conducted to the inner of the tubes above referred to, to obtain outward currents from such rooms and other places.

1206.—Henry Edward Newton, of 66, Chancery Lane, in the co. of Middlesex, mechanical draughtsman, for "*Improvements in engines for obtaining rotary motion by means of steam, gas, or other fluids.*" A communication. Patent dated April 28, 1866.

This invention relates to improvements in apparatus for obtaining a continuous rotary motion by the direct action of steam, gas, or other elastic fluids, on a wheel, the object being to cause the steam to expend the whole of its elastic force on the wheel before making its escape from the cylinder or casing. For this purpose the steam or other motive fluid is caused to act upon a wheel provided with floats, which are by preference set at an angle to the periphery of the wheel. The steam or other motive agent is applied to the cylinder or casing through a pipe situated at the side of the cylinder, and enters the space between the floats, and acts upon them, passing into a steam-chamber at the other side of the cylinder or casing, from whence it again passes between, and acts upon the floats, and into another chamber in the opposite side of the cylinder or casing. Thus the steam passes in a continuous serpentine direction throughout or across the periphery of the cylinder or casing, entering chambers provided alternately at each side of the casing, and acting successively upon the floats, thus imparting to the wheel a steady screw-like motion, and causing the steam to act expansively throughout the whole of its passage to the exit-pipe.

1229.—Richard Hugh Hughes, of 96, Hatton Garden, in the co. of Middlesex, for "*Improvements in or connected with lamps and burners, and an improved apparatus for lighting lamps.*" Patent dated May 1, 1866.

The first part of this invention is for the object of avoiding the danger which at present exists from the breaking, through heat or otherwise, of the glass of globe or other lamps at railway-stations and other places. This part of the invention consists in surrounding the glass with wire-work, so that should the glass break the pieces are prevented falling. The wire-work is suspended with the glass inside, from a support composed of three or more arms hinged, so that they contract when an opening in the upper part of the wire-work is being passed over them, and fall and open out when the opening has passed over them, and thereby suspend the wire-work.

The second part of the invention consists in the construction and employment in connexion with burners of a heating-chamber, through which the gas is made to pass, and by which it is heated before reaching the burner. This heating-chamber may be placed at any convenient part—for example, above the chimney, so that the chamber is made hot by the products of combustion from the burner; or a channel may be formed around the lower part of the burner through which the gas passes before reaching the burner. This channel becomes hot, and thereby heats the gas before it arrives at the burner.

The third part of the invention consists in making tubes or covers for gas and other lamps, or wire-gauze which has been tinned or galvanized after the gauze has been woven. The tinning of the gauze dispenses with the necessity of employing a metal ring around the edges of the gauze tops to keep them in shape. These tinned or galvanized gauze tops may be cut of any desired ornamental shape or form, and are adapted to any sized globes or chimneys, by means of three or more small pins or screws passed through the gauze so as to rest upon the globe.

The fourth part of the invention consists of an apparatus to be employed in lighting lamps. It consists of a tube, one end of which is open while the other end terminates in a small gasholder. The holder is by preference capable of expanding, and is filled with gas when expanded to its fullest capacity. The weight of the apparatus itself tends to compress the holder, so that the gas is forced through the tube and the open end thereof, where it will burn on a light being applied. The tube is fitted with a cock to stop the flow of gas when required. The portion of the tube next the open end thereof may be curved or otherwise formed, to enable it to be applied over or under gaseliers or other part required, or this portion of the tube may have several branches to enable the same apparatus to be employed for lighting lamps in various situations in theatres and other buildings. The tube may be formed in one or more pieces.

1230.—Joseph Lewis, of Manchester, in the co. of Lancaster, engineer, for "*Improvements in valves used, as in the case of slide-valves, for regulating the flow of steam, water, and other fluids.*" Patent dated May 1, 1866.

This invention consists of an arrangement whereby the valve is enabled to rotate or oscillate upon a centre of motion. It is provided with axial and diametric passages and an internal longitudinal passage.

1233.—Guillaume Charles Denis, director of the gas-works of Arras (Pas-de-Calais), in the empire of France, for "*A refrigeratory safety washer, or an apparatus for purifying the lighting gas resulting from the distilling of coal.*" Patent dated May 1, 1866.

This invention refers to certain improvements in apparatus for purifying lighting gas produced from the distillation of coal, and consists in a new system of washing the gas by bringing it into the presence of a shower as it goes out from the washing-tube, and when still very hot, and in dividing such liquid shower so that all the molecules of the products of distillation are in direct contact with the water, thus securing an energetic condensation without the least pressure, and in adapting afterwards the proper arrangements for collecting the water and the condensed products, and at the same time forming a safety-valve which prevents the back compression, the whole apparatus being comprised in a restricted space.

1239.—David Cohen, of 24, Leigh Street, Burton Crescent, in the co. of Middlesex, gas-meter maker, for "*Improvements in dry gas-meters.*" Patent dated May 2, 1866.

This invention of improvements in the construction of gas-meters relates

to that description of gas-meters commonly called dry meters, in which the measuring compartments are formed by means of a moveable or flexible diaphragm.

The first part of the improvements relates to the frame of the diaphragm. The material of the outer frame is double, and a liberal space is allowed above the usual single frame to leave room for the solder, so that the flexible part may not be scorched in soldering.

The second part of the improvements relates to the flexible part of the diaphragm. The double shields are so constructed that the inner shield is fixed to the outer one by means of grooves, which hold the flexible part firmly between them. This dispenses with the use of glue, which melts through the dampness of the gas, and, at the same time, gives extra strength to the edge of the material.

The third improvement is on the square eccentric valve, the upper part of which passes over one passage to another, uncovering long openings through which the gas passes freely from one part of the meter to the other. To the angles of the upper valve four rings are connected, which rotate around pins to guide the said upper valve in regulating the covering and uncovering of the openings. The pins are protected by glass cylinders, so that, when the rings rotate round the pins, they may not be deterred by them, but turn smoothly.

1278.—William Young, manager of the oil-works, Straiton, in the co of Mid Lothian, and Peter Brash, of Leith, in the same co., soap, candle, and oil manufacturer, for "*Improvements in the distillation of coal, shale, and other bituminous substances, to obtain oily matters therefrom, also in the redistillation of the products thereby obtained.*" Patent dated May 4, 1866.

In distilling coal, shale, and other bituminous substances, to obtain oil therefrom, there are produced, together with the oil, hydrocarbon vapours, which are with difficulty condensed, and which, even when condensed, are of small commercial value. According to this invention, these vapours, after those which are more easily condensed have been separated, are sent back into the retorts containing the coal, shale, or other bituminous matter, which is being distilled, and it is then found that they disappear in part, whilst, at the same time, the yield of easily condensable oil is increased. The vapours should be heated before they are returned to the retorts to avoid any chilling action. There is also the further advantage, in this process, that the vapours, in being passed a second time through the retorts, carry forward with them the vapours arising from the material which is being distilled, and so the process is hastened, and an improved quality of oil results. It is preferred to make the retorts with false bottoms, and to pass the vapours which are difficult of condensation back under these false bottoms. A jet of steam or a forcing or exhausting apparatus may be used to pass the vapours through the retorts.

In rectifying the oil resulting from the distillation of coal, schist, or other bituminous matter, a product is obtained which is known as "still bottoms," and which contains the more solid and easily condensed hydrocarbons. In redistilling these "still bottoms" also vapours difficult of condensation are obtained, and these vapours are passed back into the still; or the vapours coming from the still may, in a separate vessel, be mixed with the vapours which are difficult of condensation, and heated with them. Oil easy of condensation results from the action of the two different vapours, the one on the other.

1286.—Augustus Lea Bricknell, of Stratford-on-Avon, in the co. of Warwick, cabinet-maker, for "*Improvements in apparatus applicable as a rotary engine pump and water-meter.*" Provisional protection only obtained. Dated May 5, 1866.

The apparatus consists of a cylindrical chamber, in which a cylindrical centre-piece is fitted on an axis. This centre-piece carries two pistons disposed radially therein and at opposite points of the diameter. The axis and centre-piece are concentric with the cylindrical chamber in which the centre-piece is disposed, the said centre-piece having disc or flange-like ends which fit the internal diameter of the chamber. The annular space between the flanged ends constitutes the space or chamber in which the steam acts on the pistons to carry them round. At one point in the circumference of the cylindrical chamber a stem abutment or partition is disposed. This abutment is fixed to the cylinder, and extends towards the axis of the centre-piece against the periphery of which it has contact, as also with the inside of the flanged ends, thereby forming a fixed partition across the annular steam space.

1301.—William Clark, of 53, Chancery Lane, in the co. of Middlesex, engineer and patent agent, for "*Improvements in lighting apparatus.*" A communication. Provisional protection only obtained. Dated May 7, 1866.

This invention relates to a new kind of lighter, which is termed a fire-box. It is in the form of a cylinder or box of any kind, to contain pyrophorous material, to which is added 30 per cent. of acetate or nitrate of lead. This box is divided into two parts, the one the reservoir, and the other the distributor for bringing into contact with the exterior air a certain quantity of the pyrophorous material to be ignited.

APPLICATIONS FOR LETTERS PATENT.

2915.—John Thomas Kershaw, of 90, St. Paul's Road, Islington, in the co. of Middlesex, surveyor, for "*An improved ventilator.*" (Complete specification.) Nov. 9, 1866.

2920.—Solomon William Woodroffe, of Costock, in the co. of Nottingham, farmer, for "*Improvements in the construction of privies, dust-holes, commodes, water-closets, ash-pits, and tank-covers, and for other similar purposes.*" Nov. 9, 1866.

2926.—Henri Adrien Bonneville, of 38, Porchester Terrace, Bayswater, in the co. of Middlesex, patent agent, for "*An improved manure obtained by an improved process of purifying foul waters.*" A communication. (Complete specification.) Nov. 10, 1866.

2927.—Henri Adrien Bonneville, of 24, Rue du Mont Thabor, Paris, in the empire of France, and 38, Porchester Terrace, Bayswater, in the co. of Middlesex, patent agent, for "*An improved apparatus for pumping or ventilating.*" A communication. (Complete specification.) Nov. 10, 1866.

2983.—Thomas Seaville Truss, of 118, Fenchurch Street, in the City of London, civil engineer, for "*Improvements in the construction of pipes, and in the mode of joining the same, for the transmission of gas, water, steam, air, and other fluids.*" Nov. 14, 1866.

2985.—Hesketh Hughes, of Birmingham, in the co. of Warwick, engineer, for "*Improvements in the manufacture of tubes and other articles, and in the apparatus employed therein.*" Nov. 14, 1866.

2988.—James Conyers Morrell, of Leyland, in the co. of Lancaster, for "*Improvements in the construction of dry closets, and in apparatus for preparing manure.*" Nov. 14, 1866.

3317.—Charles William Dixon, of Wickham Market, in the co. of Suffolk, engineer, for "*Improvements in slide-valves.*" Nov. 17, 1866.

3018.—David Kirkaldy, of Southwark, in the co. of Surrey, engineer, for "*An improved instrument for ascertaining correct measurements.*" Nov. 17, 1866.

3029.—Julian Bernard, of 47, Lincoln's Inn Fields, London, but at present residing at 50, George Square, Glasgow, N.B., for "*Improvements in motive-power engines, parts of which are specially adapted for raising and forcing water and for other mining purposes.*" Nov. 19, 1866.

3048.—John Robertson, of Manchester, in the co. of Lancaster, machine merchant, for "*Improvements in apparatus for regulating and controlling the pressure and flow of fluids.*" Nov. 20, 1866.

3055.—Charles James Wahab, of Valleyfield, N.B., civil engineer, for "*Improvements in purifying polluted water.*" Nov. 21,1866.

GRANTS OF PROVISIONAL PROTECTION.

2552.—John Wolstenholme, of Radcliffe, in the co. of Lancaster, and Thomas Pendlebury, of the same place, for "*Improvements in tube and bar cutters, and in apparatus connected therewith.*" Oct. 4, 1866.

2556.—John Ambrose Coffey, of 32, Great St. Helen's, in the City of London, consulting engineer, for "*Improved mechanical contrivances applicable to syphons, also adaptable in the production of pumps of improved construction.*" Oct. 4, 1866.

2558.—David Henry Saul and Henry Prittie Armstrong, both of Islington, in the co. of Middlesex, gentlemen, for "*Improvements in means or apparatus employed in carburetting gas.*" Oct. 4, 1866.

2672.—John Smith, of 27, Leadenhall Street, in the City of London, engineer, and James John Rowe, of Rotherhithe Street, Rotherhithe, in the co. of Surrey, engineer, for "*Improvements in taps or cocks for regulating the flow of fluids.*" Oct. 16, 1866.

2734.—Robert Hollingdrake, of Stockport, in the co. of Chester, iron-founder, for "*Certain improvements in the construction of metallic pipes or tubes to be employed for the purposes of heating buildings and for extinguishing fire therein.*" Oct. 23, 1866.

2750.—Francis Taylor, of Romsey, in the co. of Hants, for "*Improvements in apparatus for receiving, drying, and deodorizing human excrement.*" Oct. 24, 1866.

2756.—Henry Phillips, of Clyst Honiton, Exeter, in the co. of Devon, for "*Improvements in the preparation of deodorizing materials and in the manufacture of gas.*" Oct. 25, 1866.

2762.—Philip Albert Muntz, of Keresley, near Coventry, in the co. of Warwick, gentleman, for "*Improvements in the manufacture of metal tubes.*" Oct. 26, 1866.

2788.—Charles M'Beath, of Blackburn, in the co of Linlithgow, N.B., carpenter, for "*Improvements in the treatment or distillation of shale, coal, and other bituminous substances, and in the means or apparatus employed therefor.*" Oct. 29, 1866.

2809.—Matthew Piers Watt Boulton, of Tew Park, Oxfordshire, Esq., for "*Improvements in apparatus for employing the motive power of jets of fluid.*" Oct. 30, 1866.

2827.—James John Holden and Sealy James Best, both of Bermondsey, in the co. of Surrey, engineers, for "*Improvements in the doors or closures of gas-retorts.*" Oct. 31, 1866.

2840.—Thomas Chatwin, of Birmingham, in the co. of Warwick, machinist, for "*Improvements in screw-stocks and tube-cutters.*" Nov. 2, 1866.

2841.—George Watson, of the firm of Watson and Stewart, of Brisbane, in the colony of Queensland, and of Glasgow, in the co. of Lanark, N.B., plumber and gas-fitter, for "*Improvements in reflectors and ventilators in connexion with gas and other lights.*" Nov. 2, 1866.

2842.—Stephen Holman, of 90, Cannon Street, London, E.C., in the co. of Middlesex, engineer, for "*Improvements in pumps and pump air-vessels.*" Nov. 2, 1866.

2908.—James Thomson, of New Wandsworth, in the co. of Surrey, for "*Improvements in gas-stoves for heating and cooking.*" Nov. 8, 1866.

2920.—Solomon William Woodroffe, of Costock, in the co. of Nottingham, farmer, for "*Improvements in the construction of privies, dust-holes, commodes, water-closets, ash-pits, and tank-covers, and for other similar purposes.*" Nov. 9, 1866.

NOTICES TO PROCEED.

1788.—Enoch Harrison Aydon, of Wandsworth, in the co. of Surrey, civil engineer, and Edward Field, of Chandos Chambers, Adelphi, in the city of Westminster, consulting engineer, for "*Improvements in drawing or exhausting and forcing fluids, and in instruments or apparatus applicable to such purposes.*" July 6, 1866.

1820.—Charles Edwin Austin, of 7, Broad Sanctuary, Westminster, civil engineer, for "*Improvements in apparatus applicable to sewers and drains for separating the fluid and solid parts of sewage.*" July 11, 1866.

2059.—Charles Forster Cotterill, of Cannock, in the co. of Stafford, gentleman, for "*Improvements in the manufacture of earthenware and other pipes, and in machinery or apparatus to be employed in the said manufacture.*" Aug. 10, 1866.

2277.—William Thomas Sugg, of Vincent Works, Vincent Street, Westminster, for "*Improvements in apparatus for regulating the supply of gas.*" Sept. 5, 1866.

2448.—Thomas Whittaker, of Bolton, and Joseph Constantine, of Manchester, both in the co. of Lancaster, for "*Improvements in the construction of stoves or other heating apparatus for warming and ventilating public and private buildings, baths, hot-houses, and drying-houses.*" Sept. 24, 1866.

2759.—George Tomlinson Bousfield, of Loughborough Park, Brixton, in the co. of Surrey, for "*Improvements in the manufacture of gases for the purpose of producing heat and the application thereof to metallurgical operations.*" A communication. Oct. 25, 1866.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

2726.—Edward Hughes, "*Improvements in fans for forcing and exhausting air or other gases.*" Nov. 4, 1863.

2745.—Sydney Smith, "*Improvements in safety-valves for steam-boilers, and in valves and taps for regulating the flow of fluids.*" Nov. 5, 1863.

2790.—John Ramsbottom, "*Improvements in machinery or apparatus for measuring and registering fluids, and in obtaining motive power from the same.*" Nov. 10, 1863.

2791.—Samuel John Bartlett, "*Improvements in taps.*" Nov. 10, 1863.

2801.—Thomas Mellard Reade and Joshua Hewitt, "*Improvements in the apparatus for regulating and controlling the supply of water to water-closets, and other purposes.*" Nov. 11, 1863.

2823.—William Edward Newton, "*Improvements in gas-burners.*" Nov. 12, 1863.

2835.—George Kennedy Geyelin, "*Improvements in the construction of water-closets.*" Nov. 13, 1863.

2849.—George Barker, "*Improvements in the construction of syphons for taking off liquid sewerage, overflow of rivers, and other like purposes.*" Nov. 14, 1863.

2865.—Samuel Cameron and William Johnston, "*Improvements in taps or valves, in pipe-joints, and in the valvular mechanism of water-closets.*" Nov. 16, 1863.

2870.—Charles Weightman Harrison, "*Improvements in filters.*' Nov. 16, 1863.

PATENT WHICH HAS BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £130 BEFORE THE EXPIRATION OF THE SEVENTH YEAR.

2563.—Thomas Blinkhorn ,"*Improvements in pumps.*" Nov. 11, 1859.

Legal Intelligence.

COURT OF CHANCERY.

TUESDAY, NOV. 20.

(*Before the* LORD CHANCELLOR.)

BUTT *v.* THE IMPERIAL GASLIGHT AND COKE COMPANY.

This was an appeal from a decision of Vice-Chancellor Kindersley. The bill was filed in March, 1865, to restrain the Imperial Gaslight and Coke Company from altering a road, except to the south of a certain lay-by, or basin, lying on the side of the Regent's Canal, in the parishes of St. John, Hackney, and St. Leonard, Shoreditch, and from erecting a gasometer, on the ground that it would be a nuisance, and would obstruct the view of the plaintiff's warehouse from the public. The property in question, with other lands, originally belonged to the Regent's Canal Company, and the immediate site was occupied by a pond, called Bunker's Pond, which had formed the receptacle for offal found floating in the canal, but was purchased by the company, and in December, 1844, the plaintiff became their lessee for 60 years, at a rent of £15, of 45 square yards. The lease contained two covenants—one by the plaintiff to build a lime-kiln and buildings, and keep up the road to be formed by the lessors, which he had done, and he had since carried on the trade of a lime-burner, seller of tiles, drain-pipes, &c.; and the other by the lessors, to make a good and hard road for carts and waggons on the bank of the lay-by, and in case it should be removed by the lessors to provide a new one of like materials. The access to the premises in question was from some houses called Anne's Place, about 200 yards from the lay-by. In 1853 the defendants erected a gasometer, and in 1857 another south of the lay-by, and in 1864 they desired to erect a third and to enlarge the lay-by at a considerable cost, which would necessitate an encroachment on the road and an alteration of its course. This they did, and continued it nearly straight, so as to fall into the old one by a slight curve. The plaintiff remonstrated against the erection of the proposed gasometer on the ground of nuisance, and he objected to the alteration of the road as an infringement of the covenant in the lease, and he accordingly filed this bill. On the question of nuisance scientific witnesses were examined, and *inter alias* Dr. Letheby for the defendants, and Dr. Lankester for the plaintiff, who learnedly discussed and as learnedly differed as to the relative qualities of gas and lime, gas making being spoken of by the one as comparatively harmless, and lime-burning as a noxious operation; whereas by the other gas makings was characterized as unwholesome, and lime-burning as only causing vapours which formed a component part of the common articles of consumption. It was also insisted by the plaintiff that the public in Anne's Place, where the gasometer was erected, would be unable to see his warehouse, and that his trade would be thereby injured. Vice-Chancellor Kindersley, in the course of his judgment dismissing the bill, said: "With respect to the question of nuisance, let us consider the nature of this region, which has been long devoted to gloomy operations, which fortunately have of necessity been banished from the inhabited parishes of London; and previously the site was occupied by an old pond, the receptacle of dead dogs and cats and other offal found floating in the canal. Since the gasometers have been built rather an improvement has taken place, for, being plunged in water, and inverted, all escape of noxious effluvia seems to be prevented, and, moreover, the plaintiff's manufacture is of a very analogous nature. The conflict of the evidence of Dr. Letheby, Dr. Lankester, and other scientific witnesses, is somewhat amusing. But if I were called on to elect between gas-making and lime-burning, I should say both were very disagreeable, although no doubt some of the elements evolved by the latter may be imbibed in soda-water, ginger-beer, and champagne." His honour declined to grant the injunction, and dismissed the bill with costs. The plaintiff appealed.

Mr. Glasse and Mr. Rudall appeared for the plaintiff; Mr. Baily and Mr. Bagshawe appeared for the defendants.

At the conclusion of the arguments the Lord Chancellor said: I will give judgment in this matter to-morrow morning.

WEDNESDAY, NOV. 21.

The Lord Chancellor, in delivering judgment, said: The bill in this case prays for an injunction upon two grounds—first, to restrain the defendants from destroying and breaking up the said roadway leading from the plaintiff's said premises to Anne's Place aforesaid, and on the said plan coloured light and dark green, or any part thereof, or at least from destroying and breaking up that part of the said road coloured dark green upon the said plan, and from in any manner depriving the plaintiff, his customers, workmen, servants, and agents of or obstructing them in the quiet and peaceable use and enjoyment thereof. Then, secondly, that the defendants may in like manner be restrained by the injunction of this honourable court from erecting any gas-works or gasometer upon the site coloured black in the said plan, or upon any other site which shall be in close proximity to the plaintiff's said premises. The plaintiff, who is a lime-burner, on the 12th of December, 1844, took a lease from the Regent's Canal Company of a piece of land, to hold "for the purpose of a wharf, for landing, depositing, and storing thereon lime, coals, and other goods, wares, and merchandise, conveyed thereto by means of the said canal, or destined to be conveyed therefrom by means of the said canal, for the term of 60 years." He covenanted to "erect, build, and finish upon the piece or parcel of land or ground thereby demised, with the best and soundest materials, and in the most substantial and workmanlike manner, and under the superintendence and to the entire satisfaction of the engineer for the time being of the said lessors, their successors, or assigns, a good, substantial, and sufficient house, sheds, stabling, walls, gates, erections, and buildings, according to plans, sections, and elevations to be provided by the said lessee, and to be previously approved of by the said engineer, as should in all respects be appropriate and adequate for the well and effectually landing, depositing, and storing on the said piece or parcel of land, or ground, coals, lime, and other goods, wares, and merchandise, and for carrying on the trade or business of a lime merchant. And would, on or before the 25th day of December, which would be in the year 1848, under the superintendence and to the satisfaction of the said engineer as aforesaid, remove the slope of the bank on the west side of the said piece or parcel of land, or ground, and with such materials, and in such manner as aforesaid, erect, build, and finish on the western boundary of the said piece or parcel of land, or ground, as shown on the said plan, a substantial wharf wall coped with stone. Then he covenants that he would at all times, during the continuance of the said demise, uphold, support, sustain, maintain, and keep the roadway to be formed by the said lessors, their successors, or assigns, according to the covenant in that respect thereinafter contained, and any other roadway to be substituted in lieu of such first-mentioned roadway, and also the roadway leading from the said roadway to be formed by the said lessors, their successors, or assigns, to Anne's Place, and also the gates and fences in Anne's Place, in a good and substantial state of repair and condition." And the lessors covenanted that they "would make and form a roadway of good and hard materials for carts, waggons, and other carriages, over the bank at the south end of the lay-by, as the same was shown on the plan in the margin of the indenture now in statement. And in case the roadway should be removed for the purpose of extending the lay-by, which the lessors, their successors, and assigns were to be at liberty to do, then that they the lessors, their successors, or assigns, should and would provide and form a new roadway, with the like materials as aforesaid. The defendants, the Imperial Gas Company, purchased from the Regent's Canal Company a quantity of land, including the premises comprised in the plaintiff's lease and subject of course to the covenant in that lease. They afterwards erected on the land adjoining the plaintiff's two gasometers, and in the latter end of the year 1864 they were preparing to erect a third gasometer, which would interfere with the road mentioned in the lease at the south end of the lay-by; and they also proposed, as they allege, to extend the lay-by itself. In the communication which they first made to the plaintiff of their intention, nothing was said about the extension of the lay-by; they merely referred to the roadway. There is a letter contained in the affidavit of the engineer of the company of the 24th of December, 1864, which first conveyed to the plaintiff the intentions of the Imperial Gas Company. He says: "I am desired by the directors of this company to inform you that they propose to remove the roadway at present leading to the premises you hold under lease from them at Bunker's Pond, and to make another roadway in lieu of it. The directors are desirous of putting you to as little inconvenience as possible, and to consult your views as to the position of the new road. They have instructed Mr. Clark to call upon you, and I have to request that you will be good enough to communicate with him on the subject." In another letter of the 7th of January, 1865, there is no express mention of the lay-by. There may possibly be a tacit reference to it, because in it it is said the directors have given "instructions to have the road altered under the provisions contained in your lease." Now as they could not alter the road without an extension of the lay-by, that may be considered a reference, but certainly there is no express reference of their intention to make any alteration in the lay-by. The defendants, the Imperial Gas Company, proceeded to set out a road running from the plaintiff's premises to Anne's Place, and they then wrote to the plaintiff the letter which is contained in the bill, in which the first express mention is made of their intention to extend the lay-by. It is a letter of the 6th of March, 1865, from the secretary. "Sir.—Referring to my letters of the 24th of December and 7th of January, I am desired to inform you that the needful arrangements for extending the lay-by adjoining your premises at Bunker's Pond have now been completed, and the work will be commenced without further delay. This extension of the lay-by necessitates the removal of the roadway at the south end, as I have

before informed you, and the directors having had another roadway made at considerable expense, in lieu of the old one, the roadway which you have been accustomed to use will have to be broken up immediately." The plaintiff's solicitor treated this allusion to the lay-by as a mere device. In the letter of the 8th of March, 1865, he says, "Mr. Butt is convinced that your company does not require to extend the lay-by, and that the alleged intended extension is merely a device to deprive him of the use of the roadway to his premises, and compel him to adopt the new road lately formed, which does not suit him." On the 18th of March, ten days afterwards, the plaintiff filed his bill for an injunction. The complaint as to the intended erection of the gasometer may be very shortly disposed of. One ground was put forward, but not very strongly insisted upon. It was said that the plaintiff carrying on his business, and having a board exhibited to indicate the materials in which he dealt, the erection of the gasometer would obstruct a view of his premises and so be likely to deprive him of customers; which of course must mean only chance customers who might be attracted by the board. The good sense of the counsel restrained him from pressing this point very far. I suggested in the course of the argument, that if the building of a wall, which merely intercepts the prospect of another, without obstruction to his light and air, is not a legal injury, it was very difficult to see how a building, which merely obstructed premises from the view of parties, could be the subject of an action. Indeed, the whole of the case with respect to the gasometer was virtually abandoned in the argument for the plaintiff. Mr. Glasse said, if a small gasometer had been erected without interfering with the road, he might have had more difficulty. It might not be such a thing as he could have prevented, but if it cannot be built without interfering with the plaintiff's road, he has a right to avail himself of the objection to it. The breaking up of the road, therefore, is really the substantial question to be considered. The plaintiff contends that the defendants had no right to break up any portion of the roads except that part of it which was to be formed under the lease, and that part only *bonâ fide* wanted for the purpose of the extension of the lay-by, and he says that the proposed extension of the lay-by was an after thought of the defendants, merely used for getting possession of the road. I think there is no doubt that under the lease there is no power to interfere with the road in question, except for the extension of the lay-by; but I am clear that for this purpose the whole of the roadway leading from the plaintiff's premises towards Anne's Place may be removed. If the defendants have a right, as undoubtedly they have, to remove the road, if they require it for the extension of the lay-by, and they are really going to extend it, I do not see how the *bonâ fides* of the defendants can enter into the question. Assume that they never would have thought of extending the lay-by unless it had been necessary to enable them to acquire a right over the road, still, if the access to the road was of sufficient importance to them to make them determine upon an extension of the lay-by, which they would not otherwise have considered necessary, what legal or even moral objection can there be to their thus placing themselves in a condition to avail themselves of the covenant? But the defendants case does not rest on such grounds as these. It is sworn by their engineer, that "it is necessary to divert the old road to and from the plaintiff's premises out of the course indicated in the produced plan A, in order to admit of the defendants extending the lay-by delineated in the plan A, which they are *bonâ fide* desirous of doing for their general purposes, particularly for facilitating the landing of pipes and other goods there, and which, I say, is absolutely necessary for their business, and is not, as in the bill is alleged, a mere scheme or device." It is difficult to imagine a stronger assertion of the extension of the lay-by being actually required for the beneficial use of the company; but it was insisted that this was insufficient, and Vice-Chancellor Kindersley's opinion, in *Flowers v. London, Brighton, and South Coast Railway Company*, 2nd Drewery and Smale, was referred to, where a company had powers compulsorily to take land which they thought necessary for the purposes of the Act. They having given notice to take the plaintiff's houses and land, he moved for an injunction, and filed affidavits to show that the company did not and could not want the land and houses in question. To these affidavits the company's engineer merely swore that the houses and land are or will be required for the purposes of the Act. The Vice-Chancellor said: "If this affidavit were sufficient, the effect would be that no court of justice would have power to try the question, whether any given premises are fairly and *bonâ fide* wanted for the purpose of a railway, provided only the engineer will make an affidavit, saying that they are, or will be, wanted." I will not contrast the affidavit in this case with that in the one cited, but the difference between a case where lands may be taken against a person's will by force of an Act of Parliament, and one where, under a covenant by one person, his property may be taken at the discretion of another, is so obvious that it need not be insisted upon. I think it was entirely in the power of the gas company to enlarge the lay-by at, their free will and pleasure, and that having determined to do so, their power over the road in question remains as a consequence. I will merely add a word as to the equity, which was insisted upon to entitle the plaintiff to an injunction. Where is the irreparable mischief to the plaintiff which calls for the prompt interference of this court? As far as inspection of the plan assists the judgment, the plaintiff has a road a little longer than that which he is entitled to under the lease, and apparently as commodious as the former. If the defendants had no power to break up the road, the plaintiff would certainly have a right to maintain an action to recover such damages as he would be entitled to for deprivation of the one road and the substitution of the other. I am clearly of opinion that the decree of the Vice-Chancellor is right, and ought to be affirmed, and the appeal must be dismissed, with costs.

COURT OF COMMON PLEAS.

MONDAY, NOVEMBER 12.

(*Sittings in Banco, before Chief Justice* ERLE, *and Justices* WILLES, BYLES, *and* KEATING.)

THE MAYOR, ETC., OF HEREFORD *v.* MORTON.

Mr. COLERIDGE, Q.C., and Mr. HARRINGTON appeared for the appellants, the corporation of Hereford; Mr. COOKE, Q.C., and Mr. J. O. GRIFFITS for the respondent.

This was a case stated for the opinion of the court by justices at petty sessions upon the 20 and 21 Vic., cap. 43., sec. 2, under the following circumstances:—A complaint had been preferred by the surveyor of the city of Hereford on behalf of the mayor, aldermen, and citizens, against the respondent, "that he did break a lamp and pillar belonging thereto, and did not upon demand by the Hereford Gas Company's superintendent, make satisfaction for the damage done, contrary to the form of the Statute in such case made and provided." This complaint was heard and dismissed by the justices. It was admitted that the respondent did accidentally and without negligence break a lamp and pillar which had been purchased by and was the property of the appellants, and that the amount demanded for compensation had not been paid. The 59th section of the Act 5 George IV., cap. 77, for lighting with gas the city of Hereford and the suburbs and liberties thereof, enacts—"That if any person or persons shall carelessly or accidentally break, destroy, throw down, damage, or injure any lamp or lamps hung out, set up, or belonging to the said company, or by any person or persons at his, her, or their private expense, or any pipe, pillar, pedestal post, plug, or other apparatus, matter, or thing belonging thereto or to the said company . . . . . and shall not upon demand by the said company, or their clerk, or superintendent, or other person or persons authorized by them, make satisfaction for the damage done . . . then and in every such case it shall and may be lawful to and for the mayor, or any one or more justice or justices of the said city of Hereford, and he or they is and are hereby empowered and required, upon complaint to him or them made, to summon before him or them the party or parties against whom the complaint shall be preferred, and upon hearing the allegation and proofs on both sides; or on non-appearance of the party or parties so complained against, to proceed *ex parte*, and to award such sum or sums of money by way of satisfaction to the said company, or to such other person or persons (as the case may be and require), for such damage or excess as such mayor, justice, or justices shall think reasonable." By the Gas-Works Clauses Act, 1847 (10 and 11 Vict., cap. 15), sec. 20—"Every person who shall carelessly or accidentally break, throw down, or damage any pipe, pillar, or lamp belonging to the undertakers or under their control, shall pay such sum of money by way of satisfaction to the undertakers for damage done, not exceeding £5, as any two justices or the sheriff shall think reasonable." And by the interpretation clause of this Act, the expression "the undertakers" shall mean "the persons by the special Act authorized to construct the gas-works." By the Hereford Improvement Act, 1854, 17 Vic., cap. 31, sec. 99, it is provided that the Gas-Works Clauses Act, 1847, with the exception of some of its provisions, be incorporated with that Act, and that the words "undertakers" shall mean the corporation. By the 100th and 101st sections the corporation is enabled to purchase or lease the gas-works and other property of the gas company constituted by the Act of 1824. It was admitted by the appellants that they had not purchased the gas-works referred to in these sections, but that they had contracted with the Hereford Gas Company for the supply of gas. The questions for the opinion of the court were, whether the words "person or persons" in the 59th sec. of Geo. IV. cap. 77, can include a corporation, and whether the word "undertakers" can be interpreted to mean the appellants under the circumstances.

Mr. HARRINGTON, in submitting the case for the appellants, argued against the dismissal of the information by the justices, that although the 59th section was not grammatically constituted, it was sufficiently clear to justify a conviction in this case. If by the word "persons" individuals only were meant, great inconvenience would result, and tradesmen and others would have a remedy of which the corporation would be deprived. Secondly, the 15th section of the Gas Clauses Act, 1847, gave power to the undertakers to provide lamps and pillars, and as the corporation had exercised that power they were undertakers within the meaning of that Act; at least, so far as the protection of their property was provided for.

Mr. COOKE, for the respondent, was called on by the court before counsel for the appellants had concluded. He contended that this was not a question as to whether the appellants should suffer damage caused by an accident, or not, as a remedy was certainly open to them in the county court, but whether they had a right to this summary jurisdiction for recompense. Although the corporation might be held to be included in the words "person or persons," the corporation could not be said to put up lamps at "their private expense."

The COURT stopped Mr. Harrington upon his beginning to reply.

Chief Justice ERLE, in giving judgment, said: I am of opinion that the case must be sent back to the justices. The information was founded upon an accidental breaking of a lamp and pillar within the city of Hereford, and the question for us is, whether the 5 Geo. IV., cap. 77, sec. 59, gives the corporation a right to recover damages under such circumstances. I think it does. The words upon which the matter turns are "set up at his or their private expense." The lamps belong to the appellants, and were set up by the funds belonging to them in their corporate capacity. The Statute could not have intended to give less protection to the corporation than to private individuals.

Justice WILLES concurred.

Justice BYLES: I am of the same opinion. This case falls within the very words of the Act. Persons are, by Blackstone, divided into natural and artificial, and the latter includes corporations. The enactment is one under which a party injured is to obtain recompense; therefore the words "private expense" should be interpreted broadly.

Justice KEATING: I am of the same opinion. The object of the Act is clear, viz., to protect the lamps belonging to the corporation, as well as those of any other person. The question is, whether there is anything in the words "private expense" to prevent this object from being carried out. I think the magistrates ought to have convicted.

Mr. HARRINGTON applied for the appellant's costs.

The COURT, however, refused, considering that such a case was necessary to settle the question for the future.

COURT OF BANKRUPTCY.

THURSDAY, NOV. 15.

(*Before Mr. Commissioner* HOLROYD.)

Re TOM ABERCROMBIE HEDLEY.

This was an adjourned examination meeting. The bankrupt was before the court in July last, when at the instance of the assignees he was ordered to file further accounts.

Mr. BELLAMY appeared for the assignees, and Messrs. VALLANCE and VALLANCE for an opposing creditor—Mr. Wallington, town-clerk of Leamington. Mr. GEORGE appeared for the bankrupt.

Mr. BELLAMY: The last adjournment was at the cost of the bankrupt. (To bankrupt:) Have you paid the costs of the adjournment?

Bankrupt: I have never been asked to do so.

Mr. GEORGE: It was not so.

Mr. BELLAMY: Yes; the adjournment was at the cost of the bankrupt.

Mr. GEORGE: No.

Mr. WALLINGTON: I beg to say it was. Here is what took place.

Mr. GEORGE: I object to your reading that.

Mr. WALLINGTON: I am reading from the shorthand-writer's notes.

Mr. GEORGE: It is merely a report of what you and your party put into the papers.

The COMMISSIONER: I have to go by what is upon the record. Upon the record there is no mention about the costs.

Mr. BELLAMY: The bankrupt was ordered to file a partnership account,

which was only filed on the 3rd of this present month. The assignee has not had the opportunity of going as fully into that account as will be necessary. I wish to say that it is very unsatisfactory in its character, and I am instructed by the assignee that it is not expedient the bankrupt should be beyond the control of the court at present.

The COMMISSIONER: I see the petition was filed last May, and the partnership account was only filed on the 3rd of this month; so that if the assignees ask for further time they are entitled to have it.

Mr. GEORGE: The assignee should state some reason why.

Mr. BELLAMY: I shall be happy to go into the reasons.

The COMMISSIONER: The reason, I think, is obvious; for the bankrupt has been before the court ever since May, and has had six months to prepare his accounts, which were only filed on the 3rd inst. He, therefore, cannot complain of an adjournment.

Mr. GEORGE: He did file his accounts at the time.

The COMMISSIONER: Not a partnership account.

Mr. GEORGE: The assignee afterwards asked to have a partnership account, and it is not now enough for the assignee to come forward and say it was only filed so recently.

Mr. BELLAMY: The accounts are so imperfect in character that they require investigation.

The COMMISSIONER: The assignee has not had sufficient time to examine them. The bankrupt having had six months to prepare them cannot reasonably complain that a further adjournment is asked.

Mr. BELLAMY: These accounts are quite unvouched—there are no books in the matter. I should like an adjournment for a month, if your honour would be good enough to grant it. It is a case in which the assignee, consistently with the interests of the creditors, cannot let the matter pass without further examination.

The COMMISSIONER: Let it be so.

Mr. GEORGE: Objections having been taken to the accounts, it is fair that the assignee should state to the bankrupt what those objections are, so that he may be prepared to meet them.

The COMMISSIONER: Yes.

Mr. GEORGE: I ask that it may be done within a fortnight.

The COMMISSIONER (to Mr. Bellamy): Shall you be able to do that?

Mr. BELLAMY: Not in a fortnight.

The COMMISSIONER: Let the adjournment be for six weeks.

Mr. BELLAMY: I think we can do that; but I submit that the adjournment should be at the expense of the bankrupt.

The COMMISSIONER: I think that must stand over.

Mr. GEORGE: Then the order will be, that the assignee deliver notice of objection to the bankrupt within three weeks.

The COMMISSIONER: Yes; and adjourn for six weeks, with liberty to amend the accounts if the bankrupt, after receiving notice, should find it necessary.

Mr. GEORGE: If your honour pleases.

Adjourned accordingly.

Miscellaneous News.

METROPOLITAN BOARD OF WORKS.

FRIDAY, NOV. 23.

At the Meeting of the Board this day—Sir JOHN THWAITES in the chair,

A deputation attended from the joint committee of the following vestries and district boards—viz., Hackney, Shoreditch, Bethnal Green, Mile-End Old Town, Poplar, Limehouse, and St. George-in-the-East—to present a memorial on the subject of the water supply to the east of London.

The deputation was introduced by Mr. NEWTON.

The memorial complained of the quantity and quality of the water supplied by the East London Water Company, which, it stated, was polluted with sewage to an alarming extent, and it was alleged that wherever that water was used there was an increase in the cholera death-rate. The memorialists proposed that a bill should be introduced into Parliament to compel the company to improve their sources of supply, and they urged upon the board to take steps for supporting such a bill when brought before the Legislature, and to afford them such other assistance in the matter as in their judgment the board might think fit. It was stated that the water company had given notice of their intention to go for a bill, but it was contended that it was insufficient for the purpose.

After hearing a few remarks from the deputation, the board referred the memorial to the Works Committee for consideration.

Mr. SMITH, the solicitor, reported that notice had been given by the Chartered and Imperial Gas Companies of their intention to apply to Parliament next session for increased powers.

Mr. NEWTON moved that the said bills be referred to a committee of the whole board. If there was any intention to purchase the gas-works of the metropolis, it was a great piece of folly to allow these companies to go to Parliament for fresh powers to increase their capital; therefore the board ought at once to take up the question.

Mr. FREEMAN seconded the motion, which was put and carried.

Mr. SMITH further called attention to the notice of intended application to Parliament for a bill to amend the Metropolis Gas Act, 1860. He said this was a bill of some importance, because he believed it was proposed to be introduced by the Government. Probably it would be better not to go into the matter at present, but let the bill be referred to the same committee as the one previously reported.

The suggestion was at once agreed to.

THE SUSPENSION OF MESSRS. JAMES RUSSELL AND SONS, WEDNESBURY.—On Thursday circulars were issued from the great tube-works at Wednesbury, announcing that Messrs James Russell and Sons are in a position to continue the execution of orders as heretofore. The business is now being carried on under the direction of five iron-masters, who, with the Dudley and West Bromwich Bank, are the chief creditors, to whom somewhat over £50,000 of liabilities are due. Those gentlemen have been engaged throughout the past week in ascertaining the precise state of the affairs of the firm, and the result is to afford ground for astonishment that any steps should have been taken by any one to impede the operations of the firm. There is property enough to pay every creditor 30s. in the pound, all of it easy to be realized. Without touching plant, premises, or private estate, the stock and good debts are equal in value to the whole of the liabilities. The good debts alone, which are coming in at the rate of £1500 a day, amount to above £33,000. Until the last three or four years the firm have had a very large balance at their bankers, and the business, at the lowest computation, has been realizing a profit of £15,000 a year. Such a profit is still being made, and will continue to be realized; and, under the direction of the committee of creditors mentioned, the business will be so conducted that all the liabilities will soon be cleared off. Mr. James Russell's private speculations have alone led to the interference of the bank named, who, being anxious that those speculations should not endanger the interests of the creditors to the firm—and themselves in particular—took those steps which were, in their opinion, called for, notwithstanding that they were secured on more than double the amount of their advances. There is not one of the leading trading creditors who would not readily allow the amount of his indebtedness to be doubled, if it were necessary.

PRESENTATION TO THE LATE MANAGER OF THE GAS DEPARTMENT OF THE LONDON AND NORTH-WESTERN RAILWAY COMPANY.—On the 12th instant a number of officers and workmen connected with the above company and friends assembled at the Alexandra Hotel, Liverpool, for the purpose of presenting a testimonial to Mr. J. T. Hall, upon his resigning the office of gas engineer to the company, with a view, we understand, of devoting himself to other appointments and private business. The testimonial consisted of a handsome silver tea and coffee service, which bore the following inscription:—"Presented to Mr. J. T. Hall, gas engineer, by his brother officers, employés, and friends, on his retirement from the London and North-Western Railway Company, as a token of respect and esteem." Some very interesting speeches were delivered by the officers and workmen expressing their regret at losing Mr. Hall, and their earnest wishes for his future prosperity.

THE PROBABLE EXHAUSTION OF COAL.—Professor W. S. Jevons, M.A. on Thursday evening, at the meeting of the Manchester Scientific Students Association, read a paper on the above subject. He spoke of coal as the material basis of modern civilization, and as the mainspring of all our prosperity. Many causes were requisite to make a nation great. Different persons were accustomed to attribute our greatness to very different causes—some to the religious character of England, others to our constitutional form of Government, to self-control, and so forth; but beyond all these, in order that the country should be wealthy and strong, we must have some simple mechanical and material sources of power and wealth. For this country, coal was the great source of power. We had been in the habit of under-estimating the power we had behind us. The steam-engine was often mentioned as an extraordinary source of power, and at a meeting held to erect the statue to Watt which was now in Westminster Abbey speeches were made by Mr. Huskisson and Sir J. Mackintosh in which they referred to the steam-engine as an irresistible lever for pushing forward the grand cause of civilization. But the steam-engine was only one means of using coal. The wood of England was burnt up a century ago, and now they could scarcely find wood enough for the carpenter, let alone for burning. Not only was coal used for the steam-engine, but it was also that by which we made iron. In fact, almost everything was done more or less by the use of coal, and this could not surprise them if they looked to what coal was in its chemical and physical nature. It was a kind of spring and store of forces, which they could let go whenever they liked. Sir William Thomson, the great electrician, suggested some names which it was very convenient to use. When there was a kind of force which we could wind up and let go at any moment, he called it "potential energy"—that was, the power they could turn into energy whenever they liked, as in the case of a clock. Of all forms of potential energy, the most valuable and wonderful was coal. If they took 1lb. of coal and let off all its force suddenly, as they would let off a spring, and used this force in raising the coal up, it would shoot up more than 2000 miles high, even if the force of gravity acted the whole of the distance, or it would raise 11,422,000lb. of coal one foot high. This force was turned into use by means of heat, and this was the power they used in reducing metals and for almost every chemical change that took place, and they only needed the steam-engine to turn it into mechanical motion. Electricity and magnetic power, and frost and oils, colour and odours, and even flavours were produced from coal. Some people might say that another kind of fuel might do as well. But there was scarcely any possibility of such a thing. The only heat-producing substance having a greater power than carbon consisted of hydrogen, which gave four times the heat for the same weight. But hydrogen was the lightest body in nature, so light that if they took equal volumes the carbon would produce 5000 times as much as hydrogen. So that they could not think of replacing carbon by any other fuel. It had been suggested that in the next hundred years some substitute for coal, or, at any rate, some other source of potential energy, might be found. This was a matter of dispute, but many persons overlooked the fact that the progress of science, upon which they depended for this discovery, was the increase of the power of coal. A very moderate improvement of the steam-engine would double the power of coal; and if water power and windmills could not compete with coal now, what were the chances that in the progress of science they ever would do so, when science was every day making coal more powerful? Besides, by superseding coal, they would supersede the material power of England, as they had better coal and more of it than any other nation. The consumption of coal at the present time might practically be stated at 100 millions of tons annually. Within less than 60 years it increased sevenfold, and the increase of the population and wealth had been proportionate. He thought the geometrical method of calculation was the only practical way of expressing the rate of progress. The question was whether this rate of increase would continue, because if it did there was no doubt the production of coal would outstrip all reasonable bounds. They had not yet got to the end of things; they had not made all the requisite railways; they had only seen the begining of steam navigation; in 20 years hence steam ploughing would probably be the rule, and in their water supply, in the pumping of the sewage of towns, and in 20 other different ways, steam and coal would come into use. Nothing but a rise in price would bring any serious check. The result of Mr. Hull's calculations was that there was within 4000ft. depth an amount of 83,000 millions of tons; but no one was so absurd as to suppose that they should ever get to that depth. Mr. Vivian, in his speech in Parliament on the subject, had said that there was no difficulty arising from temperature or pressure; but in the Dukinfield mine, which was the deepest perhaps in England, the pressure made itself felt in what was called a "creep," and the same was the case at Monkwearmouth. At the latter place the temperature of the rock was 80 degrees, and the atmosphere was 84 degrees, and occasionally higher. Mr. Vivian had given them an erroneous idea about the cost of sinking, which, instead of a penny a ton, was, calculating the interest and the number of years taken to bring a mine into working order, more like very many pennies. America had the largest area of coal of any other country, and the moment England began to retreat the produce in America and other countries would increase, and pass us in the race of competition. There was no use in denying or blinking the difficulty. We ought to use our present means of wealth to the best purpose, and if we increased education and diminished pauperism, and used our revenues to the best advantage, we could not be accused of wasting our wealth, and we need not look too anxiously to a future time. An interesting discussion followed, in which Mr. J. Plant, Mr. E. Hull, Mr. Dickinson, and other gentlemen took part.—*Manchester Courier*.

THE ACCOUNTS OF THE BIRMINGHAM GAS COMPANIES.

BIRMINGHAM AND STAFFORDSHIRE GASLIGHT COMPANY.

HALF-YEARLY STATEMENT OF ACCOUNTS, showing the actual State and Condition of the Concerns of the Company.

Dr. *Profit and Loss Account, June 30, 1866.* *Cr.*

To Coals			£36,841 19 2	By Balance brought from last half year's account			£21,683 10 6
Purifying materials and process			554 9 7	Sale of gas, after deducting £4976 2s. 4d. for estimated discounts and bad debts			57,303 7 7
Repair and maintenance of meters, mains, service-pipes, and other works			10,991 6 6	Coke and breeze			23,065 3 0
Wages			6,906 19 10	Tar and other residuals, and fittings			9,332 10 8
Lamps (providing, lighting, extinguishing, cleaning, and repairing)			793 4 4				
Rates and taxes			2,272 12 11				
Salaries, collectors commission, and payments to directors			3,843 4 1				
Interest on loans			650 14 4				
Professional charges and incidental expenses			584 18 1				
One per cent. on cost of works for depreciation			4,513 0 0				
Dividends paid to proprietors, viz.:—							
10 per cent. per annum on £320,400 capital, raised under Act of 8 & 9 Vict., c. 66			16,020 0 0				
7½ per cent. on £87,500 for the half year, and on £12,500 for a quarter year, raised under Act of 21 Vict., c. 1			3,515 12 6				
Miscellaneous payments			137 16 0				
Amount carried to reserve-fund			2,147 18 0				
Balance carried to next half year's account			21,610 16 5				
			£111,384 11 9				£111,384 11 9

Dr. *Balance-Sheet.* *Cr.*

To Capital raised under Act Vict. 8 & 9, c. 66			£320,400 0 0	By Cost of works, Dec. 31, 1865		£451,346 5 9	
Ditto ditto Vict. 21, c. 1			112,500 0 0	Deduct for depreciation		4,513 0 0	
Ditto ditto Vict. 27 & 28, not bearing dividend			10,906 0 0			£446,833 5 9	
Amount of loans			29,175 0 0	Add extensions made during the half year		15,238 12 5	
Reserved fund			57,569 12 8				£462,071 18 2
Amount owing by the company			26,559 16 8	Amount invested of the reserve-fund			37,280 9 7
Unclaimed dividends			171 14 8	Calls unpaid			98 0 0
Amount prepaid on the ninth call			3,016 0 0	Amount owing to the company for gas, cokes, residual products, fittings, &c. (exclusive of estimated bad debts)			53,810 9 11
Balance as above			21,610 16 5	Coals in stock			7,745 0 0
				Residual products and other stock			3,699 0 0
				Cash in hands of treasurer and cashier			17,204 2 9
			£581,909 0 5				£581,969 0 5

BIRMINGHAM GASLIGHT AND COKE COMPANY.

ANNUAL STATEMENT OF ACCOUNTS, showing the actual State and Condition of the Company for Twelve Months, ending June 30, 1866.

1. CAPITAL.—*State of Accounts at the End of Twelve Months.*

Statute or Authority under which raised.	Number of Shares.	Amount per Share.	Paid up per Share.	Total Paid up.	Total Capital.
Birmingham Gas Act, 1855, or 18 Vict., c. 48	1200	Class A, limited to 9 per cent.	£80	£ 96,000	
	400	Class B, ditto to 9 per cent.	8	3,200	
	3750	New ordinary, ditto 7½ per cent.	40	150,000	
					£249,200
		Ditto, per same Act, not bearing dividend			3,531
		Borrowed money under the above Act—"bonds"			57,350
		Total capital			£310,081

Balances brought forward.

	Midsummer, 1865.	Midsummer, 1866.
Reserved fund, all invested	£26,862 2 6	£26,706 8 1
Dividend account, unpaid	124 0 5	335 16 5
Revenue account	399 14 2	680 5 0

2. REVENUE.—*Account of all Sums actually received and paid during the Twelve Months from the 30th of June, 1865—viz., of Assets receivable and Liabilities absolutely incurred.*

RECEIPTS.		EXPENDITURE.			
Sale of gas, after deducting discounts, adjustments, and bad debts, and expenses of public lamps	£61,380 17 3	Management—			
Cokes and breezes	25,433 1 8	Office salaries, collectors commissions, and payments to directors and auditors	£4,346 11 7		
Tar, ammoniacal liquor, sundries, and profit on fittings	6,388 19 9	Stationery, printing, and incidental expenses, and wear and tear of fixtures	950 12 3		
				£5,297 3 10	
		Manufacture of gas—			
		Coals, including tonnage and delivery	£43,723 9 10		
		Purifying materials and wages	1,027 7 0		
		Supervision and labour	11,308 8 7		
		Retorts, tools, implements, with ordinary repairs and maintenance of premises	1,436 4 10		
		Rates and taxes on manufactory, mains, and offices	2,664 17 11		
		Ground-rent on leasehold works	102 14 1		
				60,263 2 3	
		Distribution—			
		Ordinary repairs and maintenance of mains, with costs and repairs of services		2,464 5 11	
		Meters—			
		Restoring, replacing, and maintaining		2,997 14 2	
		Law and parliamentary charges		110 6 4	
		Interest paid on loan capital		2,111 16 4	
		Balance, being shareholders profit		19,958 9 10	
	£93,202 18 8			£93,202 18 8	

Dr. 3. DIVIDENDS.—*Account of all Dividends actually paid for the above Twelve Months.* *Cr.*

To Balance from previous year	£ 399 14 2	By Dividends on £99,200, A and B shares, at 9 per cent.	£ 8,927 19 0		
Ditto, being shareholders profits	19,958 9 10	Dividends on £150,000, new ordinary shares, at 7½ per cent.	11,250 0 0		
Taken from reserved fund	500 0 0			£20,177 19 0	
		Balance forward to current year		680 5 0	
	£20,858 4 0			£20,858 4 0	

We have examined the above accounts, and certify them to be correct. R. HOLINSWORTH, J. GUEST. } *Auditors.*

DISMISSAL OF A SUMMONS UNDER THE PETROLEUM ACT.—At the Thames Police Court, on Saturday last, Mr. James Ingall, oil merchant, of Mellish's-Wharf, Isle of Dogs, Poplar, now better known as Millwall was charged on a summons with storing petroleum, the igniting point of which was under 100° Fahr., within 50 yards of a dwelling-house, in quantities exceeding 40 gallons, and without a licence. The prosecution was instituted by the Metropolitan Board of Works, for whom Mr. Biron, barrister, appeared; Mr. Grantham, barrister, defended Mr. Ingall. Many scientific men were examined, including Mr. Thomas Holmes, chief surgeon to the Metropolitan Police, who tested a sample of petroleum taken from a cask on the defendant's premises, and proved that it gave off an inflammable vapour which ignited at 97°; Mr. Dugald Campbell, who said the vapour ignited at 100°; Dr. Letheby, the medical officer of health of the City of London; Professor Miller, and others. Messrs. Letheby and Miller confirmed the scientific opinions of Mr. Holmes. There were long and intricate discussions as to what constituted petroleum, paraffin, and other oils and products. When Inspector Bean, of the K division, drew the sample from a cask on the defendant's premises there were 15,000 other casks of oil there. The discussion of the case lasted till a late hour, and was eventually decided by Mr. Partridge on a technical point. It was not proved there were 40 gallons of petroleum in the cask from which the sample tested by the scientific men was taken, and he accordingly dismissed the case. Mr. Partridge at the same time seriously warned the defendant to be careful, for if a fire were to take place on his premises the consequences might be very disastrous. It was impossible to exaggerate the importance of this prosecution. Mr. Biron remarked that all the shipping in the river might be destroyed if the petroleum should become ignited and flow up or down the Thames. Mr. Grantham asked for costs, which Mr. Partridge refused. The penalties sued for amounted to £20 per day for every day the petroleum was kept on the defendant's premises.

Share List of Metropolitan Gas Companies.

No. of Shares issued.	Amount per share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum	Price per Share.
	£		£ s d	£ s d	£ s d
8000	10	Anglo-Romano . .	10 0 0	9 0 0	11 to 13
5000	20	Bahia (Limited) . .	20 0 0	4 0 0	16 10 0
1000	20	Do., preference .	20 0 0	10 0 0	27 10 0
750	20	Do., do., redeem.	10 0 0	10 0 0	12 10 0
30000	5	Bombay (Limited) .	5 0 0	£5 intr.	4 to 4¼
10000	5	Do., third issue .	4 0 0	£5 intr.	3 to 3¼
10000	20	British, Limited (Norwich, Hull-Sculcoates, Hanley, Tunstall & Shelton (Potteries), Trowbridge, & Holywell.)	20 0 0	10 0 0	28 to 28½
12000	50	*Chartered*	50 0 0	10 0 0	64 to 64½
6000	50	Do.	35 0 0	10 0 0	43 to 45
10000	20	*City of London*, A shares	20 0 0	10 0 0	26 to 28
10000	10	Do., B shares	10 0 0	4 0 0	6¾ to 7¼
8000	10	Do., new shares.	10 0 0	10 0 0	13 to 14
25000	25	City of Moscow (L.)	£2 10 0	£7 intr.	13½ to 15½
17490	25	*Commercial* . . .	25 0 0	10 0 0	34 to 35
2500	20	Continental Union.	20 0 0	8 0 0	14 to 16
17500	20	Do.	10 0 0	8 0 0	5 to 7
10000	20	Do., preference .	20 0 0	7 0 0	
5827	5	County & Gen. (L)	5 0 0		
2000	5	Do., preference . (Pater, Pembroke, Ely, Lea Bridge, Northfleet, Walton, & Ware.)	5 0 0		
5000	10	*Crystal Pal. Dist.*	10 0 0	10 0 0	16 to 16½
5000	10	Do., preference .	10 0 0	6 0 0	12½ to 13
10000	10	Do.	2 10 0	7 0 0	2½ to 3
4000	50	*Equitable*	50 0 0	10 0 0	71 to 73
4000	25	Do., new shares.	25 0 0	10 0 0	36 to 36½
23406	10	European (Lim.) .	10 0 0	10 0 0	11½ to 12
12000	10	Do., new shares. Boulogne, Amiens, Rouen, Caen, Havre, & Nantes.)	5 0 0	10 0 0	6 to 6½
20000	10	*Gt. Cent. Gaz Cons.*	10 0 0	10 0 0	12⅞ to 13½
5000	10	Hong Kong (Lim.)	10 0 0		8 to 10
26000	50	*Imperial*, old sh.	50 0 0	10 0 0	74 to 74½
1300	100	Do., bonds . .	£100	10 0 0	185 to 190
7000	25	Imperial Austrian.	10 0 0		
28000	50	*Impl. Continental* (Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam, Aix-la-Chapelle, Antwp., Bordeaux, Brussels, Cologne, Frankfort-on-M., Haarlem, Stolberg, Toulouse, & Vienna	43 15 0	16 0 0	91 to 93
400	100	Impl. Mexican (L.)	75 0 0		
3000	40	*Independent* . . .	40 0 0	10 0 0	63 to 64
3000	10	Do.	10 0 0	5 0 0	7 to 9
3000	20	Do.	12 10 0	7 10 0	13 to 14
7133	50	*London*	50 0 0	10 0 0	62 to 63
5610	25	Do., 1st pref. .	25 0 0	6 0 0	28 to 29
503	50	Do., 2nd pref. .	50 0 0	6 0 0	
214	50	Do., 3rd pref. .	50 0 0	6 0 0	
18781		Do., 1st pref. sk		6 0 0	
11828		Do., 2nd pref. sk		5 0 0	
12000	5	Malta & Medit. (L.)	5 0 0	3 0 0	3 to 3¼
6000	5	Do., preference .	4 0 0	7 0 0	4 0 0
30000	5	Oriental, Calcutta	5 0 0	8 0 0	5¼ to 5½
30000	5	Do., new shares.	1 0 0	8 0 0	1 to 1¼
10000	5	Ottoman (Limited)	5 0 0		2 to 4
10000	10	Park (Limited) . .	10 0 0	£6 intr.	9¼ to 9½
27000	20	*Phœnix*	20 0 0	10 0 0	27¼ to 27½
3600	100	Do., new . . .	20 0 0	7 10 0	22 to 22½
144000	Sk.	Do. (capit. profits)		5 0 0	80 0 0
5000	20	*Ratcliff*	20 0 0	10 0 0	26 to 28
20	20	Rio de Janeiro (L.)	20 0 0	10 0 0	21 to 22
6959	5	Singapore (Lim.) .	5 0 0	3 10 0	
2000	5	Do., preference .	5 0 0	7 10 0	
4800	50	*Sth. Metropolitan*	50 0 0	10 0 0	75 to 77
15000	10	*Surrey Consumers*	10 0 0	10 0 0	13⅞ to 14
10000	10	Do., new . . .	5 0 0	10 0 0	6¾ to 7
9000	50	United General . . (Limerick)	50 0 0	4 12 0	28 0 0
10000	10	*Victoria Docks* . .	5 0 0	6 0 0	
3000	10	*Wandsworth & Putney*	10 0 0	7 10 0	13¼ to 14
20000	10	Western (L.) A sh.	10 0 0	10 0 0	13 to 14
10000	10	Do., B shares.	5 0 0	10 0 0	6¼ to 7
10000	10	Do., C shares.	3 0 0	10 0 0	4¼ to 5
20000	10	Do., D shares.	1 0 0	10 0 0	1¼ to 2
8000	5	*West Ham*	5 0 0	7 10 0	6 10 0
6000	5	Do., new shares.	3 0 0	7 10 0	3 15 0
551	10	West London Junction (Lim.) . .	10 0 0	6 0 0	
520	10	Do., preference .	10 0 0	6 0 0	

Price Current.

CASTINGS.—*Per Ton.*

Average Weight of Cast-iron Gas-pipes, per Yard.

1¼ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lb

Retail Prices are 5 to 10 per cent. higher.	London.			Glasgow.			Newcastle			Wales.			Yorkshire, Derbyshire, and Staffordshire.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Pig Iron, No. 1, G.M.B.	3	15	0	2	14	6	2	12	6	3	10	0	3	15	0
1¼ and 2-inch Socket-pipes	7	10	0	6	0	0	6	15	0	6	15	0	7	10	0
2½ and 3-inch ditto	7	0	0	6	0	0	6	5	0	6	10	0	7	0	0
4 and 5-inch ditto	6	10	0	5	10	0	5	15	0	6	0	0	6	10	0
6 inches and upwards ditto	6	5	0	5	0	0	5	10	0	5	15	0	6	5	0
Retorts, 1st fusion, hot blast	6	0	0		—		5	5	0	5	10	0	6	0	0
Ditto, 2nd ditto, cold ditto	7	0	0	5	15	0	5	15	0	6	0	0	7	0	0
Tank-plates, ¼ thick and above	6	10	0	5	10	0	5	10	0	5	15	0	6	5	0

WROUGHT-IRON TUBING,

Subject to 50 per cent. Discount.

	2 in.	1½ in.	1¼ in.	1 in.	¾ in.	½ in.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent Welded Tubes, from 2 to 12 feet—per foot	1 8	1 0	0 10	0 7	0 5	0 4½
Ditto ditto, from 6 inches to 18 inches—each	3 0	2 0	1 9	1 3	1 0	0 9
Connecting-pieces, or Long Screws	3 6	2 3	2 0	1 6	1 2	0 11
Bends, Springs, and Elbows (wrought iron)	3 9	2 3	1 9	1 0	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 10
Crosses, ditto	4 6	3 0	2 6	2 0	1 6	1 2
Iron Cocks	17 6	9 6	7 6	4 6	3 3	2 6
Ditto, with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing Sockets, Caps, Plugs, and Nipples	1 3	0 9	0 8	0 6	0 5	0 4
Plain Sockets	1 0	0 8	0 7	0 5	0 4	0 3
Syphons, 2-quart	15 0	14 0	13 6	13 0	12 0	—

GAS COALS.—*Per Ton.*

Newcastle.—Unscreened:—

East Castle, Haswells, Nettlesworth Primrose, and South Pelaw	7s. 0d.
Felling, North Pelton, Redheugh Main, Walker's Primrose, West Wear, and Whitwell Primrose	7 3
Burnhope, Craghead, Charlaw, Derwent, Edmondsley, Eighton Moor, Hartlepool Pelaw, Holmside, Lambton's Gas, Lanchester Pelaw, Medomsley, Mickley, New Pelaw, Pelaw Main, Ravensworth, South Moor Pelton, South Leverson, Townley Main, Tyne Main, West Pelaw, Wearmouth Hutton, and Witton	7 6
Peareth, Ravensworth Pelaw, Waldridge, West Garesfield, and West Pelton	7 9
Brancepeth, Dean's Primrose, New Pelton, Pelton, South Peareth, Stella, Urpeth, Washington Hutton, and West Leverson	8 0
Ramsay's Newcastle Cannel	20 0
Wigan Cannel (at Liverpool)	17 0

Scotch Cannel:—

Boghead (at Leith)	70 0
Kirkness, best (at Burntisland)	28 6
Capeldrae, 1st quality (at ditto)	28 6
Cowdenbeath	11 0
Ditto, 2nd ditto (at ditto)	18 6
Lesmahago (at Glasgow)	29 0
Ditto (at Granton)	30 0
Arniston	27 6
Wemyss	20 0
Haywood, Wilsontown (at Granton)	22 0
Pirnie	14 0
Lothian's Cannel (at Leith)	25 0
Myles' Cannel	23 6

FREIGHTS.

Coastwise—Newcastle.—Per Ton:—

Chatham and Rochester	6s. 6d
Cork	9s. 6d. to 10 0
Dover, Folkestne, & Ramsgte.	6s. 6d. to 7 0
Dublin	10s. to 10 6
Exeter Quay	10 6
Ipswich	6 3
London (from Leith)	5 6
London (Pool)	7 0
Lowestoft and Yarmouth	5 0
Portsmouth & Southampton	8 9
Plymouth	10 0
Shoreham	7 6
Whitstable	6 9
Weymouth	9 0

Foreign.—Per Keel:—

Barcelona	22 6
Bordeaux	£13 to 14 0
Boulogne and Calais	8 10
Cadiz	13 0
Cronstadt	—
Copenhagen	8 0
Genoa	£18 10s. to 19 0
Hamburg	—
Havre de Grace	10 10
Leghorn	19 0
Lisbon	13 10
Rotterdam	9 10
Stettin	—
Trieste	18 0
Venice	23 0

SUNDRIES.

Best Natle. Fire-bks., p. 1000, £2 10s. to £2	15 0
Cliff's Fire-bks. (at Wortley), p. 1000.	2 15 0
Ingham's ditto (at Wortley), p. 1000.	2 15 0
Fire-clay Retorts, p. ft. run, 5s. 6d. to	0 7 0
Tough Cake Copper, p. ton	89 0 0
English Pig Lead, p. ton	20 0 0
Welsh Bar Iron (in London), p. ton	7 0 0
Foreign Spelter, p. ton	21 10 0
English Block Tin, p. ton	85 0 0
Banca, p. ton	91 10 0
Tarred Rope Yarn, p. cwt.	1 0 0

Advertisements.

LIVESEY FIRE-CLAY WORKS,
NEAR BLACKBURN, LANCASHIRE.

ORLANDO BROTHERS,
MANUFACTURER OF PATENT CLAY RETORTS,
AND EVERY DESCRIPTION OF
TUBULAR GLAZED SEWERAGE PIPES, BENDS, JUNCTIONS, ETC.
FIRE-BRICKS, TILES, BLOCKS, AND CHIMNEY-TOPS.

WANTED, a steady, active, and sober Man as WORKING MANAGER, who thoroughly understands main and service laying, internal fitting of houses, and the working of a small work. Wages 21s. per week, with house, coal, gas, and garden free.

Apply, with testimonials as to character, &c., to Mr. FREDK. RICHARDS, C.E., Wilmslow, CHESHIRE.

A GENTLEMAN, who has had con- siderable experience in the designing, erecting, and managing of Gas-Works, at home and abroad, desires to obtain another engagement as MANAGER or ACCOUNTANT, to a Gas Company or Corporation. Has first-class testimonials, and can give security, if required.

Address, D. W., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

THE Advertiser, who has had 15 years experience in the erection and management of Gas-Works, wants a Situation as ENGINEER and MANAGER.

Address, E. S., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

WANTED, by a young Man, a Situation as CLERK. Has been in Gas Companies Offices for the last six years.

Address, X. Y. Z., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

FIRE-CLAY GAS-RETORTS, &c., CANNEL AND STEAM COALS.

WILLIAM FRASER, Inverkeithing (owner of the Works at which Fire-clay Retorts were first made), having greatly enlarged his works, can supply retorts and other fire-clay goods to any extent.

References can be given to managers of above a hundred Gas-Works whom he supplies.

WILLIAM FRASER ships COWDENBEATH PARROT COALS at Charlestown and Burntisland at 11s. per ton; and HALBEATH STEAM COALS, on Navy List, at 8s. 6d. per ton.

AMMONIACAL LIQUOR.

THE Directors of the Derby Gas Company are prepared to receive TENDERS for the purchase of the AMMONIACAL LIQUOR produced at their Works during the year 1867. The quantity of coal carbonized is about 15,000 tons per year. The contract will commence on the 1st day of January next, and terminate on the 31st day of December following, and the purchaser will be expected to take the liquor away when required, in order that no nuisance or inconvenience may be occasioned.

The Company will have no objection to extend the time if the terms offered be satisfactory.

Tenders to be addressed to the Chairman of the Derby Gas Company, and to be deliverd at the Office, in the Friar Gate, Derby, not later than Monday, the 3rd day of December next.

By order,
ISAAC FISHER, Secretary.

Derby, Nov. 15, 1866.

TO GAS COMPANIES AND CONTRACTORS.

FOR SALE, 4 Purifiers, 9 ft. square by 2 ft. deep, with hydraulic centre-valve, by-pass valves, and 6-in. connexions, vertical condensers, with by-pass, scrubber, and washer; also a STATION-METER and GOVERNOR. The whole of the above are being removed to make room for larger apparatus, rendered necessary by the rapidly increasing business of the Company.

For further particulars, apply to Mr. A. C. FRASER, Manager, Gas-Works, COLCHESTER.

Gas Company's Office, Colchester,
Aug. 14, 1866.

FOR SALE, a set of 4 Cast-Iron Dry-Lime PURIFIERS, 10 ft. square and 3 ft. 6 in. deep inside, together with hydraulic centre-valve for 10-in. connexions, and 2 sets of cast-iron girders, 46 ft. 3 in. long, with lifting crabs.

Also a 30,000 feet per hour BEALE'S EXHAUSTER, with 8-in. Walker's valves.

A 12-in. PARKINSON'S STATION-GOVERNOR.

All in excellent order, and sold in consequence of larger being substituted.

Application to be made to the MANAGER of the Leicester Gas-Works.

TO BE SOLD, a Wrought-Iron An- NULAR CONDENSER, a WROUGHT-IRON SCRUBBER, with three shelves, both 10 feet high; TWO PURIFIERS, 8 ft. by 4, by 3 ft. deep; STATION-METER, to pass 2000 per hour, complete, with 5-inch valves, by-passes, and connexions.

Also a SIX-INCH GOVERNOR, with by-pass, and a CAST IRON CIRCULAR TAR TANK, 7 ft. by 4 ft. 6 in.

The whole erected last year, and have been in use about nine months. Also several hundred yards of 6, 5, and 4-inch MAIN PIPES.

Apply at the Aldershot Gas and Water Company's Office, Bank Street, ALDERSHOT.

TO GAS COMPANIES AND ENGINEERS.

TO be Disposed of, by the Falmouth Gas, Coal, and Coke Company, Limited, a Cast-Iron GASOMETER-TANK, 45 ft. diameter by 14 ft. deep, in excellent condition—estimated weight about 78 tons; together with the bolts and nuts, belt-hoops, &c., belonging thereto. Now lying at Penryn, very convenient for shipment or delivery by railway.

Also with the above, or separately, the Framing and Angle Iron Curbs for a telescope gasholder to suit the above tank. Also the pulleys, chains, guide-wheels, bars, &c.

Application to be made to Mr. W. WARN, Secretary to the Company, Falmouth, Cornwall.

Dated Falmouth, June 23, 1866.

BALANCE-SHEETS AND REVENUE ACCOUNTS

A FIRM of Accountants, much engaged in the preparation of Gas Companies Accounts, are open to contract for the keeping, balancing, or auditing the books of other Companies, which, from their experience, they are enabled to do on moderate terms.

Address, SANDELL & MADDERS, Accountants, 4, Skinner's Place, Size Lane, LONDON, E.C.

SECOND-HAND GAS APPARATUS.

TO BE DISPOSED OF, by the Malton Gaslight and Coke Company, as under, viz:—

4 Purifiers, 4 ft. square by 3 ft. deep; hydraulic centre-valve, with 6-inch connexions; also lifting apparatus for purifier-covers complete.

26 ft. 6 in. Cast-Iron Hydraulic Main, 18 in. diameter, with 8 cast-iron supports.

24 Retort Mouthpieces, D shaped, 14 in. by 13 in.

24 Ascension, Saddle, and Dip Pipes, 4 in. diameter.

24 Cross-Bars, Screw-Handles, Ear-Pieces, and Retort-Lids.

8 Evaporating Pans.

2 10-in. and 2 6-in. Hydraulic Gasholder-Valves, with lifts complete.

1 10-in. Throttle-Valve.

Also a quantity of Stays, Tie and Damper Rods, &c. The whole of the above have been removed to make room for larger apparatus, rendered necessary by the extension of the Company's business, and will be sold a bargain to an early purchaser.

Application to be made to Mr. WM. J. MOON, Secretary and Manager, Gas-Works, MALTON.

TO GAS COMPANIES AND ENGINEERS.

TO BE SOLD, a Vertical 10-in. Pipe CONDENSER, consisting of a stack of 24 pipes 30 ft. high, on tank 11 ft. 6 in. by 7 ft. 6 in. by 2 ft., with valves complete; two three-throw piston EXHAUSTERS, with all connexions complete, each capable of passing upwards of 70,000 cubic feet Per hour; also several sundry 8 in., 9 in., and 10 in. peculiar T's, Bends, &c.

The whole to be seen on the works of the Independent Gaslight and Coke Company, at HAGGERSTONE, on application to Mr. R. J. LAING, Engineer and Manager.

KIRKWOOD CANNEL COAL.

This Coal is largely used in the Gas-Works at Glasgow, Paisley, Port Glasgow, Edinburgh, Leith, and many other towns throughout Scotland. It yields 10,648 cubic feet per ton; illuminating power, 27·55 standard candles; coke per ton, 9 cwt. 83 lbs. Railway communication from the pits (at Coatbridge) to all parts of the country; ports of shipment in Firths of Forth or Clyde.

For quotations, &c., apply to Mr. JOHN MACDONALD, 68, St. Vincent Street, GLASGOW.

JAMES OAKES and CO.,

ALFRETON IRON WORKS, DERBYSHIRE,
AND
WENLOCK IRON WHARF, 20, WHARF ROAD, CITY ROAD, LONDON,

Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water-Works, including Iron Retorts, Socket and Flange Pipes, Bends, Branches, and Syphons of all sizes, Lamp Columns, &c., &c.

N.B.—Orders for Cast-iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention.

CHARLES HORSLEY, Agent.

GEORGE GLOVER & CO.'S
PATENT DRY GAS-METERS.

The advantages of these Meters are best appreciated by a consideration of the evils they avert. The more prominent of these evil are the following:—

1. Inaccurate measurement, and varying registration.
2. Jumping of the lights, and their sudden extinction.
3. Escapes of gas through the plugs being left out, or imperfectly secured, when the Wet Meter has been replenished with water.
4. The gas passing without being registered at all.
5. The temptations and facilities to fraud which it is notorious the Wet Meter presents.

CLASSES X. & XXXI.

6. The damage to house property which the impracticable attempt to keep the lights from jumping, by giving all the pipes a gradual ascent from the Meter, so as to admit of the water trickling back into it, necessarily occasions.
7. The waste of gas from the higher pressure required to work Wet Meters, the possibility of the water freezing, and their axles and moving parts becoming corroded.

These faults, characteristic of the Wet Meter, and fruitful in annoyance, interruption to business, pecuniary loss, and danger, are entirely averted by the use of George Glover and Co.'s Patent Dry Gas-Meter.

It is, besides, more durable than the Wet Meter; and they maintain it in good working order for five years, free of cost to the purchaser; and for any number of years, at half the expense at which the Wet Meter can be maintained.

As regards accurate measurement, correct registration, the absence of temptation to fraud, safety, convenience, and economy, the superiority of their Dry Meter is admitted; and it has come more rapidly into use, both in this country and abroad, than any Meter hitherto manufactured.

The prices may be compared favourably with those of any meters in the market; and they are lower than most.

List of Prices, and all Particulars, may be obtained on Application.

RANELAGH WORKS, RANELAGH ROAD, PIMLICO, LONDON, S.W.;
127, BOULEVARD DE MAGENTA, PARIS; AND 15, MARKET STREET, MANCHESTER.

E. J. & J. PEARSON,
DELPH & TINTAM ABBEY FIRE-CLAY & BRICK-WORKS,
STOURBRIDGE,

PROPRIETORS OF
BEST GLASS-HOUSE POT & CRUCIBLE CLAY;
MANUFACTURERS OF
GLASS-HOUSE POTS, CRUCIBLES, GAS-RETORTS, & FIRE-BRICKS OF EVERY DESCRIPTION.

THE

LIQUID METER COMPANY,

LIMITED.

CAPITAL £100,000, in 10,000 Shares of £10 each.

First Issue, 2000 Shares; £1 per Share on Application, and £4 per Share payable on Allotment, and further Calls payable at intervals of not less than Three Months.

DIRECTORS.

ALEXANDER ANGUS CROLL, C.E., *Chairman*,
STEPHENSON CLARKE,
DR. FRASER,
HENRY PALFREY STEPHENSON,
ORLANDO BROTHERS, C.E.,
JABEZ CHURCH, C.E.,
JOHN TAYLOR CHEETHAM,
GEORGE RAIT, *Managing Director*,

Directors of the Gas-Meter Company, Limited.

CONSULTING ENGINEER.

THOMAS GREAVES BARLOW, C.E., 42, Parliament Street, S.W.

BANKERS.

MESSRS. SMITH, PAYNE, AND SMITHS.

Offices, 10, Coleman Street, City, E.C.

PROSPECTUS.

The Board of Directors of the Gas-Meter Company, Limited, having had under their consideration for a considerable period the importance of producing, at a reasonable price, a liquid meter especially adapted for the accurate measurement of water (which is a want as yet unsupplied), are in possession, by purchase, of an invention for that object, secured by royal letters patent granted to W. Payton, dated 17th November, 1865, which, they believe, will accomplish all that is desired. The Gas-Meter Company, Limited, have, during the past year, made separate workshops, erected the necessary machinery, and provided plant to manufacture the said meter; but, owing to the demands made upon them for the supply of gas-meters, and the rapidity with which these demands are increasing, have thought it advisable to form a separate company, and to create a distinct capital, to enable them to manufacture, on an appropriate scale, the liquid meter, for which an extensive sale is anticipated.

The directors of the Gas-Meter Company, Limited, have the pleasure to submit the following report from their consulting engineer:—

42, Parliament Street, S.W., London, Oct. 22, 1866.

To the Directors of the Gas-Meter Company, Limited.

Gentlemen,—I have inspected the machinery recently erected on your works for the manufacture of Payton's Liquid Meter. I am much pleased with its ingenuity and efficiency. The instrument itself is simple and economical in its construction, and is less liable to derangement than any other similar instrument with which I am acquainted; and by giving motion to the vanes, it may be also used as a gas-exhauster, a pump, or apparatus for raising or forcing liquids in general. The machinery by which the vanes are cut is especially ingenious, and ensures perfect accuracy in their working. The whole of the machinery is driven by a three-horse power gas-engine, and I believe the manufacture of these instruments is destined to become a lucrative branch of the company's operations.—I am, gentlemen, yours faithfully, (Signed) THOMAS G. BARLOW.

The Liquid Meter Company, Limited, is therefore formed for the purpose of purchasing from the Gas-Meter Company, Limited, the premises, machinery, plant, and goodwill of that portion of their business which relates to the manufacture of liquid meters, for which the Gas-Meter Company, Limited, will grant to the Liquid Meter Company, Limited, an exclusive licence for Great Britain and Ireland for manufacture and sale, at the nominal royalty per meter sold to be paid by the Gas-Meter Company, Limited, to the patentee.

The purchase by the Liquid Meter Company, Limited, to take effect from the 1st November last, at which date the machinery and plant were in a complete state for the manufacture of the liquid meter on a limited scale.

The Gas-Meter Company, Limited, to sell to the Liquid Meter Company, Limited, the business relating to liquid meters, the machinery, plant, premises, and goodwill, together with the exclusive licence aforesaid, for the sum of £4000, in consideration of the Gas-Meter Company, Limited, participating in the surplus profits hereafter referred to.

It is proposed to make the share capital of the company £100,000, to be raised, as may be required, by shares of £10 each, and to give the company by its Deed of Association, power to raise by the issue of debenture bonds a further sum not exceeding at any time one-half the amount of its paid-up capital.

It is proposed at the present time to issue 2000 shares of £10 each, upon which £7 10s. per share shall be paid before another issue of like amount shall be made.

The shareholders in the Gas-Meter Company, Limited, to have a preference in the allotment of the said first issue of shares, to the extent of having allotted to them two shares of £10 each for every one share of £100 each held by them in the Gas-Meter Company, Limited. This will absorb 1200 out of the present issue of 2000 shares.

The annual profits of the company, after payment of interest on the debenture bonds, if any, and 8 per cent. dividend on the share capital, to be appropriated as follows, viz.:—One-half thereof to be divided among the shareholders as an addition to their dividend, and the remaining half to be paid to the Gas-Meter Company, Limited.

The patent granted to W. Payton, dated 17th November, 1865, besides covering the invention of the liquid meter, secures the right of adapting the instrument to uses as a gas-exhauster, a pump, &c., referred to in the engineer's report. Whilst the company propose only in the first instance to confine their business to the manufacture of liquid meters, they have taken the necessary powers by their Memorandum of Association to manufacture other apparatus which it may be thought desirable to associate with the manufacture of liquid meters.

The Articles of Association may be seen at the company's office.

All applications for shares must be made on or before the 4th day of December, 1866.

MEMORANDUM OF ASSOCIATION.

1st. The name of the company is "THE LIQUID METER COMPANY, LIMITED."

2nd. The registered office of the company is to be established in England.

3rd. The objects for which the company is established are, the purchase from the Gas-Meter Company, Limited, of the premises, machinery, plant, and goodwill of that portion of the business of the Gas-Meter Company, Limited, which relates to the manufacture of liquid meters, together with an exclusive licence for Great Britain and Ireland, for the manufacture and sale of the liquid meter patented by W. Payton, 17th November, 1865, and for carrying on the manufacture of said liquid meter, and other apparatus included under patent dated the 17th November, 1865, as aforesaid, and generally for carrying on the manufacture of liquid meters, gas-exhausters, pumps, and other apparatus which it may be considered desirable to associate with the manufacture of liquid meters, and for the sale and letting on hire of the same.

4th. The liability of the shareholders is limited.

5th. The nominal capital of the company is £100,000, divided into 10,000 shares of £10 each, with power to increase the capital by the creation of preference capital, if necessary, and otherwise as provided by the Articles of Association.

FORM OF APPLICATION FOR SHARES (to be retained by the Bankers).

To the Directors of the LIQUID METER COMPANY, LIMITED. *Offices, 10, Coleman Street, London, E.C.*

GENTLEMEN,—Having paid to your credit at Messrs. Smith, Payne, and Smiths, the sum of £ , I request you to allot me Shares of £10 each in the LIQUID METER COMPANY, LIMITED; and I hereby accept the same (or any less number which may be allotted to me), subject to the provisions contained in the Memorandum and Articles of Association; and I agree to pay the further sum of £9 per Share in such manner and at such time as you may direct, in accordance with the Prospectus; and I further authorize you to place my name on the Register of Shareholders.

Name in full
Residence
Business or Profession
Dated 186

CONTINENTAL UNION GAS COMPANY, LIMITED.

DIRECTORS.

LEWIS CUBITT, Esq., Chairman, Director of the Imperial Gas Company, London.
John Allan, Esq., Director of the Oriental Gas Company.
H. Wollaston Blake, Esq., London Street, Fenchurch Street.
W. T. Fawcett, Esq., Director of the European Gas Company.
John Fisher, Esq., 60, St James's Street.
William White, Esq., Director of the European Gas Company.

BANKERS.

Messrs. Glyn, Mills, Currie, and Co., 67, Lombard Street, E.C.

Allotment of the Unissued Seven per Cent. Preference Shares.

The Directors are now prepared to receive applications for 4951 Preference Shares of £20 each, at present unallotted.

These shares bear a 7 per cent. preferential dividend, with the further right of participating pro rata, in all profits after the ordinary shares have received dividends of 10 per cent.; the last dividend paid on the ordinary shares was at the rate of 8 per cent. per annum. They will be issued as paid up in full, or by four instalments of £5 per share, at intervals of two months. Dividend will accure from the respective dates of payment.

The income of the Company is derived from the Gas-Works, all in full operation, and with exclusive privileges, in the following towns and cities in France and Italy, viz.:—Strasburg, Cette, Nismes, Montargis, Vienne, Roanne, Beaucaire, Rueil, Albi, Milan, Genoa, Parma, Modena, Alessandria, and Messina. The gross revenue has shown a continuous increase for a series of years, and during the past year exceeded £200,000.

Parties applying may send their applications on the annexed form, through their own brokers, or to the Secretary of the Company, 18, St. Helen's Place, London. E.C.

The allotment will be made according to priority of application.

By order of the Board,
R. J. FENNESSY, Secretary.

London, Nov., 1866.

CONTINENTAL UNION GAS COMPANY, LIMITED.

SEVEN PER CENT. PREFERENCE SHARES, Participating with the Ordinary Stock, pro rata, in all profits above 10 per Cent.

To the Directors of the Continental Union Gas Company, Limited.

Gentlemen,—I hereby request that you will allot me Seven per Cent. Preference Shares, of £20 each, in the Continental Union Gas Company, Limited, and I hereby undertake to accept the same or any smaller number which may be allotted to me.

I am desirous of paying up such shares*

I am, Gentlemen,
Your obedient Servant,
Name in full.....
Address in full.....
Date.....

* Here insert the words "in one amount," or "by instalments," as the case may be.

D. GRANT & CO.,

GAS-METER MANUFACTURERS

(Stamped according to the Sale of Gas Act).

STATION-METERS ANY SIZE.

PHOTOMETERS, EXPERIMENTAL METERS, PRESSURE-GAUGES, &c.

Price List on application.

GAS-METER WORKS, CROSSCAUSWAY, EDINBURGH.

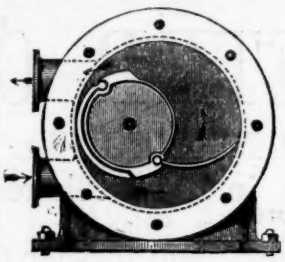
TO INVENTORS AND PATENTEES.

MR. W. H. BENNETT, having had considerable experience in matters connected with Gas, Water, and Sanitary Improvement, begs to say that he continues to assist Inventors in the perfection of their designs, and to obtain for them PROVISIONAL PROTECTION, whereby their invention may be secured for Six Months; or LETTERS PATENT, which are granted for Fourteen Years.

Patents completed, or proceeded with at any stage, thereby rendering it unnecessary for persons resident in the country to visit London.

Patents procured for Foreign Countries.

Information as to cost, &c., supplied gratuitously upon application to the advertiser, 42, Parliament Street, WESTMINSTER. [Office of the JOURNAL OF GAS LIGHTING, &c.]



HORSLEY'S PATENT GAS EXHAUSTER.

(From 250 Feet to 200,000 Feet per Hour.)

The only Exhauster not requiring a relieving-valve in the by-pass. For particulars and prices apply to the PATENTEE,

22, Wharf Road, City Road, London, N.

To Gas Companies, Gas Engineers, Gas Fitters, &c.

THE NEWEST DESIGNS FOR

LAMP-POSTS, DWARF GAS PILLARS, BRACKETS, LAMPS, LANTERNS, &c.,

Will, upon receipt of particulars, be forwarded free, on application to

TURNER & ALLEN,

IRONFOUNDERS, ENGINEERS, &c.,
201, UPPER THAMES STREET.

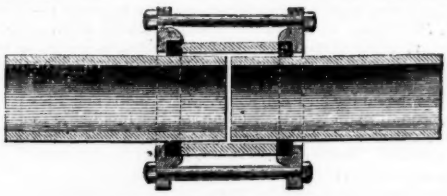
WALTER FORD,

159, GRAY'S INN ROAD, LONDON.

MANUFACTURER OF WET AND DRY GAS-METERS, STATION-METERS, GOVERNORS, &c. &c.

Sole Manufacturer of **PADDON'S PATENT STREET-LAMP REGULATORS,** for insuring any required consumption. These Regulators are in general and increasing use, and references can be given to Gas Companies who use them for every Lamp.

DR. NORMANDY'S PATENT PIPE-JOINTS.



SOLE MANUFACTURERS—

A. NORMANDY and CO., Engineers and Ironfounders,

HOLLY BUSH PLACE, BETHNAL GREEN ROAD, LONDON, N.E.

Also Sole Manufacturers of the Patent Marine Aërated Fresh-Water Apparatus, Steam Pumps Steam Winches, &c.

These Joints have been in use nearly three years on gas-mains, and are still perfectly sound. They have also been proved quite sound under a pressure of 680 feet head of water.

The advantages which these Joints offer are economy, perfect soundness and durability, ease and rapidity of application, use of perfectly plain pipes, so that a tight Joint may be made with cut pipes, even though the ends do not come close together. Any ordinary labourer is capable of securely fixing them.

These Joints are particularly applicable to gas, water, and suction pipes, and remain permanently sound; they are cheaper than the socket-joint, as they save the lead, the gasket, the iron forming the socket (which in a 3-inch main amounts to 10 lbs.), and the fire for melting the lead. There is also considerable saving of time, more than four Joints being made in the time required for making only one of the others, and by unscrewing the bolts, a pipe can be removed and replaced with the greatest facility.

By means of these Joints, which are made of all sizes, pipes made of either wrought or cast iron, copper, lead, tin, earthenware, glass, bitumen, gutta-percha, suction-hose, &c., may be rapidly and soundly united, and taken apart with facility.

ECONOMY IN GAS PURIFICATION.

Mc DOUGALL'S

HYDRATED PEROXIDE OF IRON.

This Oxide is now well known, and has commended itself for efficiency and durability. It is free from any mixture of sawdust or similar material, and every particle is available for use. It readily takes up sulphur, revivifies rapidly, and lasts longer than any other Oxide in the market. Prices on application to—

ALEX. Mc DOUGALL, Manufacturing Chemist,

LONDON—11, Arthur Street West, London Bridge, E.C.; MANCHESTER—Riga Street, Shudehill.

GAS & GENERAL ENGINEERING OFFICES,
53 FREDERICK STREET, EDINBURGH.

MR. JOHN ROMANS, Civil and Practical Engineer, may be consulted at the above address on all matters pertaining to Gas-Works, Water-Works, and other Engineering questions.
Plans and Specifications Furnished, Works Erected and Repaired, or taken on Lease for a term of years.
Mr. Romans is also agent in Edinburgh for supplying High-Classed Scottish Cannel Coal and Fire-Clay Goods.

FRASER'S PATENT RIBBED CAST-IRON RETORTS are being introduced at the Gas-Works, Derby, Shrewsbury, Portsea, Nottingham, Syston, Whitwick, Barrow-in-Furness, Seaham, Risborough, Leighton, Loughborough, Corwen, Castle Donnington, Kegworth, Royston, Woking, Swadlincote, Rugby, Carlow in Ireland, Stornoway, N.B.; also at Gibraltar and Montreal, &c.
Apply to Mr. A. C. FRASER, Gas-Works, COLCHESTER.

OXIDE OF IRON,
We are prepared to supply, on moderate terms,
HYDRATED PEROXIDE OF IRON (BOG OCHRE),
Same quality as supplied by us to several of the most extensive Gas Companies, and which has given entire satisfaction.
FRANCIS RITCHIE & SONS,
BELFAST.

INTERNATIONAL EXHIBITION,
1862. CLASS X.
PRIZE MEDAL
For excellence of Fire-Clay Gas Retorts, and "HONOURABLE MENTION" for good quality of Fire-Bricks.
WILLIAM STEPHENSON & SONS,
THROCKLEY,
NEWCASTLE-ON-TYNE,

STOURBRIDGE FIRE-CLAY WORKS.
E. BAKER & CO.,
24 WHARF, HARROW ROAD, PADDINGTON, W.
FIRE-BRICKS, LUMPS, SQUARES, and TILES of all dimensions.
GAS-RETORTS always in stock.
GARDEN EDGINGS of various patterns.
ORNAMENTAL BUILDING BRICKS.
GRATE BACKS in various designs.
Contracts entered into to set Retorts, erect Furnaces, &c.
Shipments on the shortest notice.

THOMAS CARR & SON,
MANUFACTURERS OF
FIRE-BRICKS, LUMPS, TILES, RETORTS, &c. &c.
SCOTSWOOD FIRE-BRICK WORKS,
NEAR
BLAYDON-ON-TYNE.

ADDISON POTTER,
WILLINGTON QUAY,
NEAR NEWCASTLE-UPON-TYNE,
Manufacturer of Clay Retorts, Fire-Bricks, and every description of Fire-Clay Goods.

HARRIS and PEARSON,
PROPRIETORS OF
BEST CLASS-HOUSE POT AND CRUCIBLE CLAY
MANUFACTURERS OF
FIRE BRICKS, GAS RETORTS, &C.
AMBLECOTE FIRE CLAY AND BRICK WORKS,
STOURBRIDGE.
Late in the occupation of I. and W. Xing. Originally J. Pidcock, Esq.
NB A quantity of best Clay Retorts in stock, viz.—Circulars, 14 inches, 15 inches, 16 inches.
D's, 16×12, 15×14, 20×16, 16×18.

HANCOCK'S INDIA-RUBBER GAS-TUBING.
All sizes, from ¼ in. to 4 in. diameter and upwards.
Also,
INDIA-RUBBER BAGS for GAS-MAINS.
WASHERS for GAS and STEAM JOINTS.
VALVES (pure solid Rubber) for STEAM-ENGINES.
PACKING (Roll or Sheet) for STEAM-ENGINES.
STRAPS (Rubber and Canvas) for DRIVING MACHINERY.
HOSE-PIPES to convey HOT or COLD WATER.
COKE-HOSE, made specially for rough usage.
GAUGE GLASS RINGS and WASHERS.
SUCTION and DELIVERY HOSE-PIPES for PUMPS, FIRE-ENGINES, BREWERIES, and FACTORY purposes.
BRASS JETS, STOP-COCKS, SPREADERS, and UNION CONNECTING-JOINTS fitted to ditto.
Illustrated Price-Lists on application.
JAMES LYNE HANCOCK,
Vulcanized India-Rubber Works,
GOSWELL MEWS, AND 266, GOSWELL ROAD, LONDON, E.C.

Trade Mark. THE MEDAL FOR 1862.
THE ONLY PRIZE MEDAL AWARDED FOR TUBES AND FITTINGS.
CROWN TUBE-WORKS,
WEDNESBURY, STAFFORDSHIRE.
WAREHOUSE—81, UPPER GROUND ST., LONDON.
JAMES RUSSELL & SONS,
Patentees and First Makers of Wrought-Iron Tubes.

W. J. HOLLANDS,
IRON MERCHANT,
31, BANKSIDE, LONDON, S.E.
SOCKET, FLANGE, HOT-WATER PIPES, AND ALL CONNEXIONS; RETORTS, HYDRAULIC MAIN, LAMP-COLUMNS, &c.; AND EVERY DESCRIPTION OF CASTINGS AND WROUGHT-IRON-WORK FOR GAS AND WATER-WORKS, STEAM, AND GENERAL PURPOSES.
N.B.—All goods kept in stock, and supplied at wholesale prices. Estimates given, and orders by post punctually attended to the same day.

BIRTLEY IRON WORKS,
CHESTER-LE-STREET,
DURHAM.
Manufactory for every description of Casting and Machinery for Gas-Works and Water-Works.
Warehouse in London for Cast-iron Pipes and Connexions of all sizes and in any quantity, Scott's Wharf, Bankside, Southwark.
Office in London, Mr. E. M. PERRI 3,78, Lombard Street.

BELGIAN CLAY RETORTS.
J. SUGG and CO., late ALBERT KELLER, Ghent.—The removal of the import duties on Earthenware permitting the entry of Clay Retorts into England, Messrs. Sugg, of Ghent, beg to draw the attention of the Gas Companies of London, and other Cities, to the very superior quality of the RETORTS manufactured by them. They can be made of any size, in one piece, and of any form. The price will be in proportion to the weight, and very moderate in comparison to their value.
Communications, addressed to J. SUGG and Co., GHENT, will receive immediate attention.

JAMES M'KELVIE,
CANNEL COAL MERCHANT,
HAYMARKET,
EDINBURGH.
Established 1840.

ROBERT MACLAREN and CO., EGLINTON FOUNDRY, GLASGOW,
Manufacturers of all sizes of Cast-Iron Main Pipes, by an improved Patent General Ironfounders, Gas Engineers, and Wrought-Iron Tube Makers.

D. BRUCE PEEBLES,
Gas-Meter Manufacturer,
FOUNTAINBRIDGE,
EDINBURGH.

BEST AND HOBSON,
LATE
ROBERT BEST,
100, CHARLOTTE STREET, BIRMINGHAM,
Manufacturers of
CHANDELIERS, PENDANTS, BRACKETS,
Brass and Iron Gas-Fittings, Steam and Water-Cocks &c., &c.
Also,
PATENT WELDED IRON TUBES,
For Gas, Steam, Water, and other purposes.
GAS APPARATUS OF EVERY DESCRIPTION.
High-pressure Water-Valves and Cocks, &c., &c.
Plumbers Brassfoundry,
BRASS, COPPER, COMPOSITION, AND LEAD TUBES.
Works: Birmingham, and Great Bridge, Staffordshire.

ALFRED PENNY, Gas and CONSULTING ENGINEER,
WENLOCK IRON WORKS,
21 & 22, WHARF ROAD, CITY ROAD, LONDON.
Mr. PENNY having had a large experience in the construction, alteration, and management of Gas-Works, begs to inform the Directors of Gas Companies that he may be consulted on all matters appertaining thereto. He also manufactures Gasholders, Purifiers, and all the various apparatus used in Gas-Works, and keeps in stock Retorts and Mouthpieces, Socket-Pipes, Bends, Branches, T-pieces, &c. &c.
Plans, Specifications, and Estimates prepared.

FREDERICK RICHARDS,
CONSULTING AND GENERAL ENGINEER.
WILMSLOW, CHESHIRE.
Plans, Specifications, and Estimates made for New or the Alteration of existing Gas-Works.
Gas-Works leased, or Estimates given for the Manufacture of Gas per Contract for a term of years.
Manchester Office: 8, Cateaton Street.

GAS COAL.
MESSRS. RICHARD EVANS & CO., Haydock Collieries, near St. Helen's, are prepared to SUPPLY their best GAS COAL to Gas Companies on favourable terms.
This Coal is extensively used by some of the largest Gas Companies in the Kingdom.
It produces 9,400 cubic feet of 17-candle power, and yields 13 cwt. of coke per ton.

JAMES NEWTON & SONS,
(Established 1820,)
FIRE-BRICK AND TILE MERCHANTS,
Wholesale and for Exportation,
FALCON DOCK, 78 AND 79, BANKSIDE,
SOUTHWARK, LONDON, S.E.,
DEPÔT for STOURBRIDGE AND NEWCASTLE FIRE-BRICKS, LUMPS, TILES, and FIRE-CLAY, and every Article suitable for
GAS AND WATER WORKS.

B. CARPENTER'S Improved Wood SIEVES for Gas-Purifiers.
Works: 14, John Street, Pentonville Road, LONDON, N.
The above sieves are used by the principal gas companies in London and the country. Their utility, durability, and cheapness combined, render them superior to all others.
Testimonials from gas engineers who have tested their qualities forwarded on application.
All orders punctually attended to, and estimates given if required.

MR. G. W. STEVENSON, C.E., F.G.S., (for the last 10 years Engineer to the Corporation of Halifax), may be consulted upon all matters connected with the construction of gas-works, and the manufacture and supply of gas; also upon the construction of water-works and the supply of water to towns; and also in respect to the sewerage of towns, and sanitary works generally.
Offices, Waterhouse Street, HALIFAX, and 14, Park Street, WESTMINSTER.

CATHELS'S Patent Four-Way Disc GAS-VALVES, applied to Purifiers, Gasholders, or other apparatus, save from ONE-HALF to TWO-THIRDS the number of ordinary Valves and Connexions. They are simple, strong, and durable; and having no ground faces or rubbing surfaces, cannot get set fast however long they may remain unmoved. The direction in which the Gas is passing can also be seen at a glance.
Descriptive Circular, Prices, &c., furnished on application to the Manufacturers, Messrs. GUEST and CHRIMES, ROTHERHAM.

J. T. B. PORTER & CO.,
GAS ENGINEERS,
MANUFACTURERS AND CONTRACTORS FOR GAS-WORKS
Of any extent at Home and Abroad,
GOWTS BRIDGE WORKS, LINCOLN,
AND
JOHN STREET, ADELPHI, LONDON, W.C.

SAMUEL CUTLER, Gasholder MAKER and CONTRACTOR
For Tanks, Roofs, Purifiers, Condensers, Erection and Alteration of Works and every description of GAS APPARATUS.
PROVIDENCE IRON WORKS,
MILL WALL, POPLAR, LONDON, E.
Main Laying and Gas-Works erected complete.

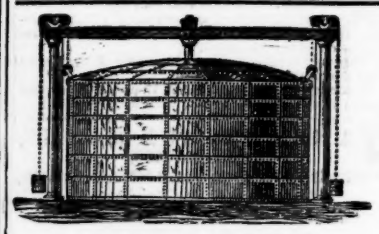
WALTER MABON & CO.,
Engineers,
ARDWICK IRON-WORKS,
FAIRFIELD STREET, MANCHESTER,
MANUFACTURERS OF
IRON TANKS, GASHOLDERS,
GAS APPARATUS,
PIPES, VALVES, IRON ROOFS,
WROUGHT AND CAST-IRON GIRDERS.
DESIGNS, SPECIFICATIONS, & ESTIMATES FURNISHED.

J. STRACHAN,
CONSULTING GAS ENGINEER,
68, KING'S ROAD, READING,
Having had many years experience in the adjustment and regulation of the supply of gas to public lamps, begs to offer his services to Gas Companies, Corporations, or Boards of Health, on reasonable terms.
Contracts taken for laying mains, general repairs, and extension of gas-works.

GAS AND WATER PIPES.

CLARIDGE, NORTH, & CO.,

BILSTON.



IMPROVED GAS APPARATUS,

FOR TOWNS, VILLAGES, &c.

INVENTED AND MANUFACTURED BY

W. C. HOLMES & CO.,

WHITESTONE IRON-WORKS, HUDDERSFIELD.

WILL BE SENT ON APPLICATION:—

PLANS, SPECIFICATIONS, and PRICES of GAS APPARATUS;

PLANS, SPECIFICATIONS, and ESTIMATES of the requisite BUILDINGS for each size of Apparatus;

PLANS of the IMPROVED ANNULAR CONDENSERS;

PLANS of the COMBINED PURIFYING APPARATUS, so eminently adapted for Exportation.

LONDON OFFICES—56, GRACECHURCH STREET, CITY.

*** *Please address letters to the Works at Huddersfield.*

NOTICE OF REMOVAL.

THE BUSINESS OF

WILLIAM SUGG,

GAS ENGINEER,

is removed to his New Factory,

VINCENT WORKS, VINCENT STREET,

REGENT STREET, WESTMINSTER.

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WORTLEY FIRE-BRICK AND RETORT WORKS,

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W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of

RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY

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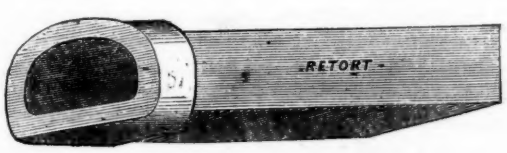

KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them FREE FROM CRACKS AND CORRECT IN FORM. By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize.

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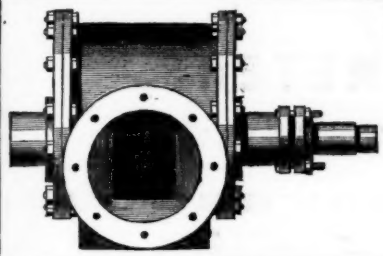

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